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\*\*\*\*\* Welcome to STN International \*\*\*\*\*

NEWS 1 Web Page for STN Seminar Schedule - N. America  
NEWS 2 JUL 02 LMECLINE coverage updated  
NEWS 3 JUL 02 SCISEARCH enhanced with complete author names  
NEWS 4 JUL 02 CHEMCATS accession numbers revised  
NEWS 5 JUL 02 CA/Caplus enhanced with utility model patents from China  
NEWS 6 JUL 16 Caplus enhanced with French and German abstracts  
NEWS 7 JUL 18 CA/Caplus patent coverage enhanced  
NEWS 8 JUL 26 USPATFULL/USPAT2 enhanced with IPC reclassification  
NEWS 9 JUL 30 USGENE now available on STN  
NEWS 10 AUG 06 CAS REGISTRY enhanced with new experimental property tags  
NEWS 11 AUG 06 FSTA enhanced with new thesaurus edition  
NEWS 12 AUG 13 CA/Caplus enhanced with additional kind codes for granted patents  
NEWS 13 AUG 20 CA/Caplus enhanced with CAS indexing in pre-1907 records  
NEWS 14 AUG 27 Full-text patent databases enhanced with predefined patent family display formats from INPADOCDB  
NEWS 15 AUG 27 USPATOLD now available on STN  
NEWS 16 AUG 28 CAS REGISTRY enhanced with additional experimental spectral property data  
NEWS 17 SEP 07 STN AnaVist, Version 2.0, now available with Derwent World Patents Index  
NEWS 18 SEP 13 FORIS renamed to SOFIS  
NEWS 19 SEP 13 INPADOCDB enhanced with monthly SDI frequency  
NEWS 20 SEP 17 CA/Caplus enhanced with printed CA page images from 1967-1998  
NEWS 21 SEP 17 Caplus coverage extended to include traditional medicine patents  
NEWS 22 SEP 24 EMBASE, EMBAL, and LEMBASE reloaded with enhancements  
NEWS 23 OCT 02 CA/Caplus enhanced with pre-1907 records from Chemisches Zentralblatt  
NEWS 24 OCT 19 BEILSTEIN updated with new compounds  
NEWS 25 NOV 15 Derwent Indian patent publication number format enhanced  
NEWS 26 NOV 19 WPIX enhanced with XML display format  
  
NEWS EXPRESS 19 SEPTEMBER 2007: CURRENT WINDOWS VERSION IS V8.2,  
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 19 SEPTEMBER 2007.  
  
NEWS HOURS STN Operating Hours Plus Help Desk Availability  
NEWS LOGIN Welcome Banner and News Items  
NEWS IPC8 For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that specific topic.

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 13:12:42 ON 27 NOV 2007

=> FILE REG	SINCE FILE	TOTAL
COST IN U.S. DOLLARS	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 13:13:10 ON 27 NOV 2007  
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 26 NOV 2007 HIGHEST RN 955995-34-3  
DICTIONARY FILE UPDATES: 26 NOV 2007 HIGHEST RN 955995-34-3

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

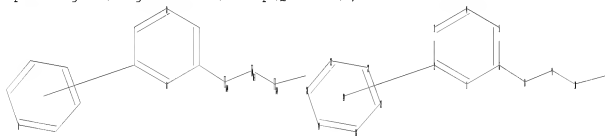
Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=>

Uploading C:\Program Files\Stnexp\Queries\5,6-DIARYPYRAZINES.str



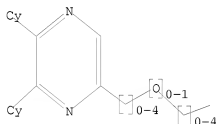
chain nodes :  
8 9 10 11  
ring nodes :  
1 2 3 4 5 6 18 19 20 21 22 23  
chain bonds :  
6-8 8-9 9-10 10-11  
ring bonds :  
1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23  
exact/norm bonds :

8-9 9-10  
 exact bonds :  
 6-8 10-11  
 normalized bonds :  
 1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23  
 isolated ring systems :  
 containing 1 :

Match level :  
 1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS  
 11:CLASS 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:Atom 24:Atom

L1 STRUCTURE UPLOADED

=> D L1  
 L1 HAS NO ANSWERS  
 L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> S L1  
 SAMPLE SEARCH INITIATED 13:13:30 FILE 'REGISTRY'  
 SAMPLE SCREEN SEARCH COMPLETED - 59832 TO ITERATE

3.3% PROCESSED 2000 ITERATIONS 2 ANSWERS  
 INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
 SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*INCOMPLETE\*\*  
 BATCH \*\*COMPLETE\*\*  
 PROJECTED ITERATIONS: 1182059 TO 1211221  
 PROJECTED ANSWERS: 732 TO 1660

L2 2 SEA SSS SAM L1

=> S L1 SSS FULL  
 FULL SEARCH INITIATED 13:13:45 FILE 'REGISTRY'  
 FULL SCREEN SEARCH COMPLETED - 1197630 TO ITERATE

83.5% PROCESSED 1000000 ITERATIONS 1328 ANSWERS  
 INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
 SEARCH TIME: 00.00.09

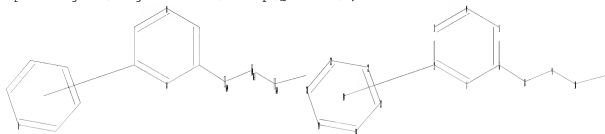
FULL FILE PROJECTIONS: ONLINE \*\*INCOMPLETE\*\*  
 BATCH \*\*COMPLETE\*\*  
 PROJECTED ITERATIONS: 1197630 TO 1197630

PROJECTED ANSWERS: 1471 TO 1709

L3 1328 SEA SSS FUL L1

=>

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```
chain nodes :
8 9 10 11
ring nodes :
1 2 3 4 5 6 18 19 20 21 22 23
chain bonds :
6-8 8-9 9-10 10-11
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23
exact/norm bonds :
8-9 9-10
exact bonds :
6-8 10-11
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23
isolated ring systems :
containing 1 :
```

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS  
11:CLASS 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:Atom 24:Atom

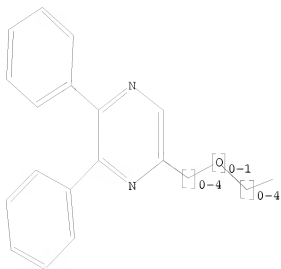
L4 STRUCTURE UPLOADED

=> D L4

L4 HAS NO ANSWERS

L4 STR





Structure attributes must be viewed using STN Express query preparation.

=> S L4

SAMPLE SEARCH INITIATED 13:15:54 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 803 TO ITERATE

100.0% PROCESSED 803 ITERATIONS

50 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 14360 TO 17760

PROJECTED ANSWERS: 800 TO 1760

L5 50 SEA SSS SAM L4

=> S L4 SSS FULL

FULL SEARCH INITIATED 13:16:04 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 15901 TO ITERATE

100.0% PROCESSED 15901 ITERATIONS

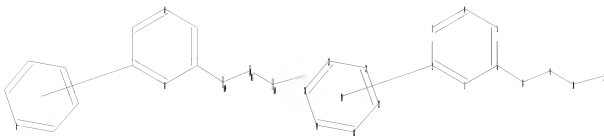
1158 ANSWERS

SEARCH TIME: 00.00.01

L6 1158 SEA SSS FUL L4

=>

Uploading C:\Program Files\Stnexp\Queries\5,6-DIARYPYRAZINES.str



```

chain nodes :
8 9 10 11
ring nodes :
1 2 3 4 5 6 18 19 20 21 22 23
chain bonds :
6-8 8-9 9-10 10-11
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23
exact/norm bonds :
8-9 9-10
exact bonds :
6-8 10-11
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23
isolated ring systems :
containing 1 :

```

```

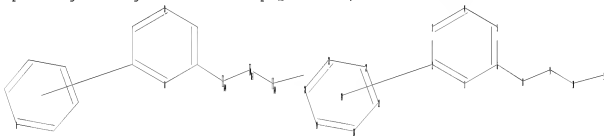
Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS
11:CLASS 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:Atom 24:Atom

```

L7 STRUCTURE UPLOADED

=>

Uploading C:\Program Files\Stnexp\Queries\5,6-DIARYPIPAZINES.str



```

chain nodes :
8 9 10 11
ring nodes :
1 2 3 4 5 6 18 19 20 21 22 23
chain bonds :
6-8 8-9 9-10 10-11
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23

```

```

exact/norm bonds :
8-9 9-10
exact bonds :
6-8 10-11
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23
isolated ring systems :
containing 1 :

```

```

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS
11:CLASS 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:Atom 24:Atom

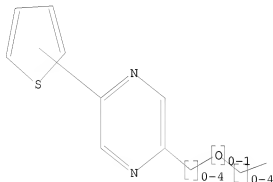
```

L8 STRUCTURE UPLOADED

```

=> d l8
L8 HAS NO ANSWERS
L8 STR

```



Structure attributes must be viewed using STN Express query preparation.

```

=> s l8
SAMPLE SEARCH INITIATED 13:26:17 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 2684 TO ITERATE

74.5% PROCESSED 2000 ITERATIONS 0 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
                        BATCH **COMPLETE**
PROJECTED ITERATIONS: 50573 TO 56787
PROJECTED ANSWERS: 0 TO 0

```

L9 0 SEA SSS SAM L8

```

=> s l8 sss full
FULL SEARCH INITIATED 13:26:28 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 52942 TO ITERATE

```

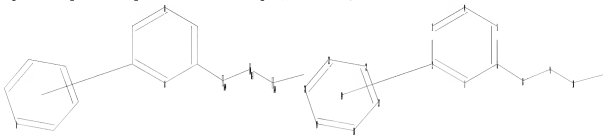
100.0% PROCESSED 52942 ITERATIONS 25 ANSWERS

SEARCH TIME: 00.00.01

L10 25 SEA SSS FUL L8

=>

Uploading C:\Program Files\Stnexp\Queries\5,6-DIARYPYRAZINES.str



chain nodes :

8 9 10 11

ring nodes :

1 2 3 4 5 6 18 19 20 21 22 23

chain bonds :

6-8 8-9 9-10 10-11

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23

exact/norm bonds :

8-9 9-10

exact bonds :

6-8 10-11

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23

isolated ring systems :

containing 1 :

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS

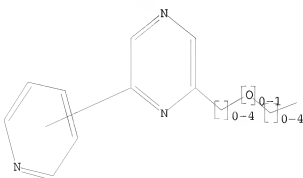
11:CLASS 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:Atom 24:Atom

L11 STRUCTURE UPLOADED

=> D L11

L11 HAS NO ANSWERS

L11 STR



Structure attributes must be viewed using STN Express query preparation.

=> S L11

SAMPLE SEARCH INITIATED 13:28:09 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 18058 TO ITERATE

11.1% PROCESSED 2000 ITERATIONS 1 ANSWERS  
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 353113 TO 369207  
PROJECTED ANSWERS: 1 TO 360

L12 1 SEA SSS SAM L11

=> S L11 SSS FULL

FULL SEARCH INITIATED 13:28:15 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 362711 TO ITERATE

100.0% PROCESSED 362711 ITERATIONS 293 ANSWERS  
SEARCH TIME: 00.00.02

L13 293 SEA SSS FUL L11

=> FILE CAPLUS

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
697.85	698.06

FULL ESTIMATED COST

FILE 'CAPLUS' ENTERED AT 13:28:26 ON 27 NOV 2007

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FILE COVERS 1907 - 27 Nov 2007 VOL 147 ISS 23

FILE LAST UPDATED: 26 Nov 2007 (20071126/ED)

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<http://www.cas.org/infopolicy.html>

=> D HIS

(FILE 'HOME' ENTERED AT 13:12:42 ON 27 NOV 2007)

FILE 'REGISTRY' ENTERED AT 13:13:10 ON 27 NOV 2007

L1               STRUCTURE UPLOADED  
 L2               2 S L1  
 L3           1328 S L1 SSS FULL  
 L4               STRUCTURE UPLOADED  
 L5               50 S L4  
 L6           1158 S L4 SSS FULL  
 L7               STRUCTURE UPLOADED  
 L8               STRUCTURE UPLOADED  
 L9               0 S L8  
 L10           25 S L8 SSS FULL  
 L11            STRUCTURE UPLOADED  
 L12            1 S L11  
 L13           293 S L11 SSS FULL

FILE 'CAPLUS' ENTERED AT 13:28:26 ON 27 NOV 2007

=> S L6 OR L10 OR L13  
       324 L6  
       23 L10  
       61 L13  
 L14       399 L6 OR L10 OR L13

=> D L14 1-399 IBIB ABS HITSTR

L14 ANSWER 1 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:1176040 CAPLUS

DOCUMENT NUMBER: 147:493772

TITLE: Organometallic complex and light emitting element,  
 light emitting device, and electronic device using the  
 organometallic complex

INVENTOR(S): Inoue, Hideko; Seo, Satoshi; Ohsawa, Nobuharu

PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan

SOURCE: U.S. Pat. Appl. Publ., 108pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

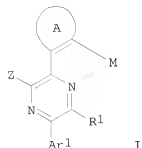
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2007244320	A1	20071018	US 2007-725971	20070320
JP 2007284432	A	20071101	JP 2007-73216	20070320
KR 2007095802	A	20071001	KR 2007-27482	20070321
PRIORITY APPLN. INFO.:			JP 2006-77899	A 20060321

GI



AB An organometallic complex having a structure represented by a general formula I, wherein A represents an aromatic hydrocarbon group having 6-25 carbon atoms; Z represents any one of hydrogen, an alkyl group having 1-4 carbon atoms, an alkoxy group having 1-4 carbon atoms, or an aryl group having 6-25 carbon atoms; Ar1 represents an aryl group having 6-25 carbon atoms; R1 represents any one of hydrogen, an alkyl group having 1-4 carbon atoms, or an alkoxy group having 1-4 carbon atoms; and M is a central metal and represents an element belonging to Group 9 or Group 10, is described. A light emitting device comprising the organometallic complex is also described. An light emitting display device or an electronic device having a display portion comprising the organometallic complex is also described.

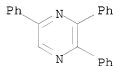
IT 36476-77-4P, 2,3,5-Triphenylpyrazine 121431-84-3P  
952677-47-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(organometallic complex and light emitting element, light emitting device, and electronic device using the organometallic complex)

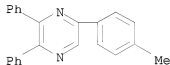
RN 36476-77-4 CAPLUS

CN Pyrazine, 2,3,5-triphenyl- (CA INDEX NAME)



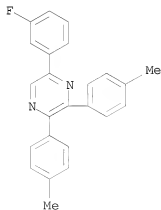
RN 121431-84-3 CAPLUS

CN Pyrazine, 5-(4-methylphenyl)-2,3-diphenyl- (CA INDEX NAME)



RN 952677-47-3 CAPLUS

CN Pyrazine, 5-(3-fluorophenyl)-2,3-bis(4-methylphenyl)- (CA INDEX NAME)

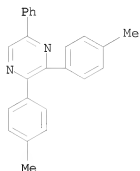


IT 952677-46-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(organometallic complex and light emitting element, light emitting device, and electronic device using the organometallic complex)

RN 952677-46-2 CAPLUS

CN Pyrazine, 2,3-bis(4-methylphenyl)-5-phenyl- (CA INDEX NAME)



L14 ANSWER 2 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:1086344 CAPLUS

DOCUMENT NUMBER: 147:416047

TITLE: Quinoxaline derivatives and light-emitting element,  
light-emitting device, electronic device using the  
quinoxaline derivative

INVENTOR(S): Egawa, Masakazu; Kawakami, Sachiko; Nakashima, Harue;  
Ohsawa, Nobuharu; Seo, Satoshi; Nomura, Ryoji

PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan

SOURCE: PCT Int. Appl., 367pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007108403	A1	20070927	WO 2007-JP55335	20070312
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			

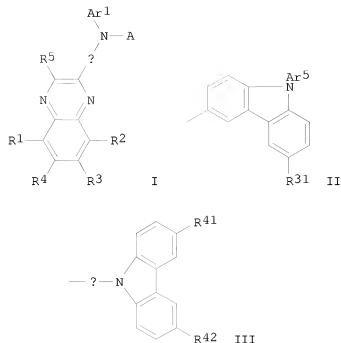
US 2007222374 A1 20070927 US 2007-723385 20070319

JP 2007284434 A 20071101 JP 2007-73638 20070320

PRIORITY APPLN. INFO.: JP 2006-77900 A 20060321

GI





AB The title quinoxaline derivs. are described by the general formula I (R1-4 = independently selected H, C1-4 alkyl, or C6-25 aryl; R5 = H, C1-4 alkyl, or C6-25 aryl; Ar1 = C6-25 aryl;  $\alpha$  = C6-25 arylene; A =  $-\beta$ -N(Ar3)(Ar4), II, or III;  $\beta$  = C6-25 arylene; Ar3-5 = C6-25 aryl; R31, R41, and R42 = independently selected H, C1-4 alkyl, or C6-25 aryl; and  $\gamma$  = C6-25 arylene). Light-emitting elements comprising a layer including a quinoxaline derivative (e.g., as a host) between electrodes, light-emitting devices, including displays, incorporating the elements, and electronic devices incorporating the displays are also described.

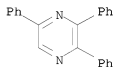
IT 36476-77-4P, 2,3,5-Triphenylpyrazine

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(quinoxaline derivs. and light-emitting elements and devices and electronic devices using devices in displays)

RN 36476-77-4 CAPLUS

CN Pyrazine, 2,3,5-triphenyl- (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 3 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:1071816 CAPLUS

DOCUMENT NUMBER: 147:448809

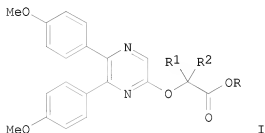
TITLE: Preparation of pyrazine derivatives as antithrombotic agents

INVENTOR(S): Piao, Riyang; Liu, Jingchang; Zhang, Junhui; Wang, Huanqun; Wang, Weiwei; Qi, Yong

PATENT ASSIGNEE(S): Jilin Institute of Materia Medica, Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 13pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101037416	A	20070919	CN 2007-10055565	20070425

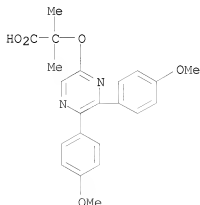
PRIORITY APPLN. INFO.: CN 2007-10055565 20070425  
 GI



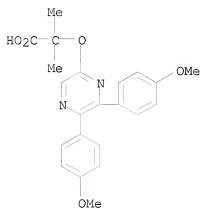
AB The title compds. with general formula I [wherein R = H, alkali metal, or (un)substituted C1-5 alkyl; R1 and R2 = C1-5 alkyl] are prepared as antithrombotic agents. For example, 2-hydroxy-5,6-bis(4-methoxyphenyl)pyrazine (preparation given) was reacted with acetone and chloroform in the presence of NaOH to give I (where R = H; R1 = R2 = Me). I showed good antithrombotic activities in rabbit. Formulations containing I as an active ingredient were also described. The derivative with strong antithrombotic activity can be used for treating cerebral thrombosis, myocardial infarction, atherosclerosis, thromboangitis obliterans, and hyperlipemia (no data).

IT 952291-99-5P 952292-01-2P 952292-02-3P  
 RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (drug candidate; preparation of pyrazine derivs. as antithrombotic agents)

RN 952291-99-5 CAPLUS  
 CN Propanoic acid, 2-[[5,6-bis(4-methoxyphenyl)-2-pyrazinyl]oxy]-2-methyl-  
 (CA INDEX NAME)

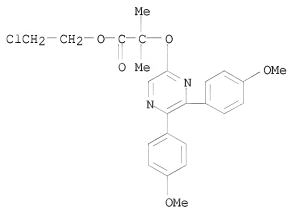


RN 952292-01-2 CAPLUS  
 CN Propanoic acid, 2-[[5,6-bis(4-methoxyphenyl)-2-pyrazinyl]oxy]-2-methyl-, sodium salt (1:1) (CA INDEX NAME)

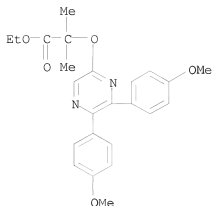


● Na

RN 952292-02-3 CAPLUS  
 CN Propanoic acid, 2-[[5,6-bis(4-methoxyphenyl)-2-pyrazinyl]oxy]-2-methyl-, 2-chloroethyl ester (CA INDEX NAME)

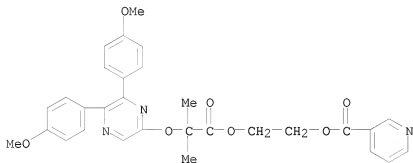


IT 952292-00-1P 952292-03-4P 952292-04-5P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (drug candidate; preparation of pyrazine derivs. as antithrombotic agents)  
 RN 952292-00-1 CAPLUS  
 CN Propanoic acid, 2-[[5,6-bis(4-methoxyphenyl)-2-pyrazinyl]oxy]-2-methyl-, ethyl ester (CA INDEX NAME)



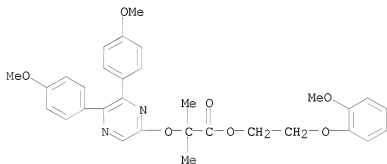
RN 952292-03-4 CAPLUS

CN 3-Pyridinecarboxylic acid, 2-[2-[[5,6-bis(4-methoxyphenyl)-2-pyrazinyl]oxy]-2-methyl-1-oxopropoxy]ethyl ester (CA INDEX NAME)



RN 952292-04-5 CAPLUS

CN Propanoic acid, 2-[[5,6-bis(4-methoxyphenyl)-2-pyrazinyl]oxy]-2-methyl-, 2-(2-methoxyphenoxy)ethyl ester (CA INDEX NAME)



L14 ANSWER 4 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:1041397 CAPLUS

TITLE: Structure-activity studies on diphenylpyrazine derivatives: A novel class of prostacyclin receptor agonists

AUTHOR(S): Asaki, Tetsuo; Hamamoto, Taisuke; Sugiyama, Yukiteru; Kuwano, Keiichi; Kuwabara, Kenji

CORPORATE SOURCE: Discovery Research Laboratories, Nippon Shinyaku Co.,

SOURCE: Ltd, 14 Nishinosho-Monguchi-Cho, Kisshoin, Minami-ku, Kyoto, 601-8550, Japan  
 Bioorganic & Medicinal Chemistry (2007), 15(21), 6692-6704  
 CODEN: BMECEP; ISSN: 0968-0896  
 PUBLISHER: Elsevier Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB To develop nonprostanoid prostacyclin receptor agonists with a high degree of metabolic resistance and an extended duration of action, a novel series of diphenylpyrazine derivs. was synthesized and evaluated for their inhibition of ADP-induced human platelet aggregation. Structure-activity relationship studies on the side chain containing the carboxylic acid moiety of the lead compound (I) showed that the length of the linker and the presence of the concatenating nitrogen atom adjacent to the pyrazine ring are critical for the antiaggregatory activity. This study led to the discovery of 2-amino-5,6-diphenylpyrazine derivs. (II, III, and IV), which showed potent inhibition of platelet aggregation with IC<sub>50</sub> values of 0.2 μM. Among these compds., IV is an orally available and long-lasting prostacyclin receptor agonist which is promising for the treatment of various vascular diseases.

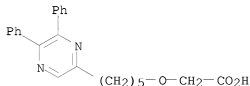
IT INDEXING IN PROGRESS

IT 760940-28-1P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (structure-activity studies on diphenylpyrazine derivs., a class of prostacyclin receptor agonists)

RN 760940-28-1 CAPLUS

CN Acetic acid, 2-[[5-(5,6-diphenyl-2-pyrazinyl)pentyl]oxy]- (CA INDEX NAME)

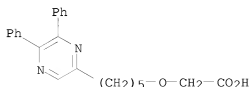


IT 475085-99-5P 788152-32-9P

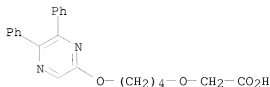
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (structure-activity studies on diphenylpyrazine derivs., a class of prostacyclin receptor agonists)

RN 475085-99-5 CAPLUS

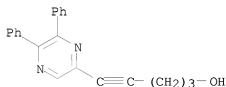
CN Acetic acid, 2-[[5-(5,6-diphenyl-2-pyrazinyl)pentyl]oxy]-, sodium salt (1:1) (CA INDEX NAME)



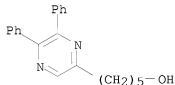
RN 788152-32-9 CAPLUS  
 CN Acetic acid, [4-[(5,6-diphenylpyrazinyl)oxy]butoxy]- (9CI) (CA INDEX NAME)



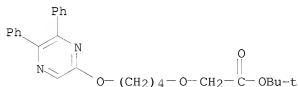
IT 475086-92-1P 475086-93-2P 475086-96-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (structure-activity studies on diphenylpyrazine derivs., a class of  
 prostacyclin receptor agonists)  
 RN 475086-92-1 CAPLUS  
 CN 4-Pentyn-1-ol, 5-(5,6-diphenyl-2-pyrazinyl)- (CA INDEX NAME)



RN 475086-93-2 CAPLUS  
 CN 2-Pyrazinepentanol, 5,6-diphenyl- (CA INDEX NAME)



RN 475086-96-5 CAPLUS  
 CN Acetic acid, [4-[(5,6-diphenylpyrazinyl)oxy]butoxy]-, 1,1-dimethylethyl  
 ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 5 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2007:922054 CAPLUS  
 DOCUMENT NUMBER: 147:448559

TITLE: Porphyrin, phthalocyanine and porphyrazine derivatives with multifluorenyl substituents as efficient deep-red emitters

AUTHOR(S): Barker, Carl A.; Zeng, Xianshun; Bettington, Sylvia; Batsanov, Andrei S.; Bryce, Martin R.; Beeby, Andrew

CORPORATE SOURCE: Department of Chemistry, Durham University, Durham, DH1 3LE, UK

SOURCE: Chemistry--A European Journal (2007), 13(23), 6710-6717, S6710/1-S6710/14  
CODEN: CEUJED; ISSN: 0947-6539

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

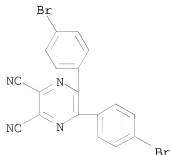
LANGUAGE: English

AB The synthesis and photophys. properties are described for a series of porphyrin, phthalocyanine and pyrazinoporphyrazine derivs. which bear four or eight peripheral fluorenyl substituents as antennae. Representative examples are 5,10,15,20-tetra(9,9-dihexyl-9H-fluoren-2-yl)porphyrin, 5,10,15,20-tetrakis[4-(9,9-dihexyl-9H-fluoren-2-yl)phenyl]porphyrin (I), 2,3,9,10,16,17,23,24-octakis(9,9-dihexyl-9H-fluoren-2-yl)-29H,31H-phthalocyanine (II) and 2,3,9,10,16,17,23,24-octakis[4-(9,9-dihexyl-9H-fluoren-2-yl)phenyl]-29H,31H-tetra-pyrazinoporphyrazine (III). Palladium-mediated Suzuki-Miyaura cross-coupling reactions have been key steps for attaching the substituents. The compds. are deep-red emitters:  $\lambda_{\text{max}}(\text{em}) = 659$  (I), 737 (II) and 684 nm (III). Their absorption and emission spectra, their fluorescence lifetimes and quantum yields are correlated with the structures of the macrocycles and the substituents. The solution fluorescence quantum yields of porphyrin derivs. substituted with fluorene and terphenyl substituents ( $\Phi_f = 0.21$ -0.23) are approx. twice that of tetraphenylporphyrin. For phthalocyanine derivative II,  $\Phi_f$  was very high (0.88). Specific excitation of the fluorene units of II produced emission from both of them ( $\lambda_{\text{max}} = 480$  nm) and also from the phthalocyanine core ( $\lambda_{\text{max}} = 750\text{nm}$ ), indicating a competitive rate of energy transfer and radiative decay of the fluorenes. Organic light-emitting devices (OLEDs) were made by spin-coating techniques by using a poly-spirobifluorene (PSBF) copolymer as the host blended with I (5 weight%) in the configuration ITO/PEDOT:PSS/PSBF copolymer:3/Ca/Al. Deep-red emission ( $\lambda_{\text{max}} = 663$  nm; CIE coordinates  $x = 0.70$ ,  $y = 0.27$ ) was observed with an external quantum efficiency of 2.5% (photons/electron) (at 7.5 mA cm<sup>-2</sup>), a low turn-on voltage and high emission intensity (luminance) of 5500 cd m<sup>-2</sup> (at 250 mA/m<sup>2</sup>).

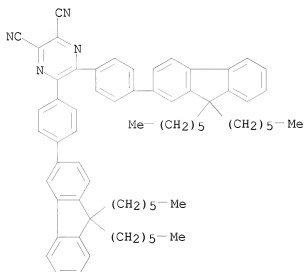
IT 101579-12-8P  
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(mol. and crystal structure; preparation and photophys. properties of porphyrin, phthalocyanine and porphyrazine derivs. with multifluorenyl substituents)

RN 101579-12-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



IT 952155-37-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and photophys. properties of porphyrin, phthalocyanine and  
 porphyrazine derivs. with multifuorenyl substituents)  
 RN 952155-37-2 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5-[4-(9,9-dihexyl-9H-fluoren-2-yl)phenyl]-6-[4-  
 (9,9-dihexyl-9H-fluoren-3-yl)phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 6 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2007:835096 CAPLUS  
 DOCUMENT NUMBER: 147:287894  
 TITLE: Preparation and application of dendritic compounds  
 INVENTOR(S): Yu, Gui; Xu, Xinjun; Chen, Shiyan; Liu, Yunqi; Di,  
 Zhongan; Qiu, Wenfeng; Zhu, Daoben  
 PATENT ASSIGNEE(S): Institute of Chemistry, Chinese Academy of Sciences,  
 Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 19pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101003516	A	20070725	CN 2006-10011225	20060118
PRIORITY APPLN. INFO.:			CN 2006-10011225	20060118

AB The title dendritic compds. are prepared by: (1) two-step reacting between 4,4'-dibromo di-Ph ethanedione and tri-Me silico acetylene, (2) reacting with tetra-Ph cyclopentanone, and (3) reacting with 1,2-diamino-4,5-dicyanobenzene, 1,2-diamino-4,5-dimethylbenzene and 2,3-diaminobutanedinitrile, resp. The obtained compds. are shown in formulas 1, 2 and 3. In formula 1, the compound is 6,7-dicyano-2,3-di-[4-(2,3,4,5-tetraphenyl)phenyl]-phenylquinoxaline. In formula 2, the compound is 6,7-dimethyl-2,3-[4-(2,3,4,5-tetraphenyl)phenyl]-phenylquinoxaline. In



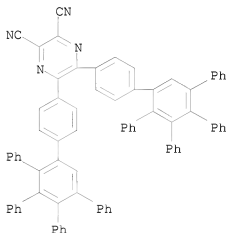
formula 3, the compound is 2,3-dicyano-5,6-di-[4-(2,3,4,5-tetraphenyl)phenyl]-phenylpyrazine. The compds. can be used for preparing OLED with high luminescent brightness and efficiency.

IT 943996-10-9P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation and application of dendritic compds.)

RN 943996-10-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(3',4',5'-triphenyl[1,1':2',1''-terphenyl]-4-yl)- (CA INDEX NAME)



L14 ANSWER 7 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:833098 CAPLUS

DOCUMENT NUMBER: 147:265422

TITLE: Method for fabricating interface-type or mixed-type organic light-emitting diode with adjustable luminous color

INVENTOR(S): Yu, Gui; Xu, Xinjun; Chen, Shiyang; Liu, Yunyin; Di, Zhongang; Zhu, Daoben

PATENT ASSIGNEE(S): Institute of Chemistry, Chinese Academy of Sciences, Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 35pp.  
CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 101005122	A	20070725	CN 2006-10011227	20060118
PRIORITY APPLN. INFO.:			CN 2006-10011227	20060118

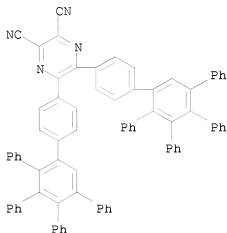
AB The title method for interface-type organic light-emitting diode (OLED) entails: (1) vacuum-depositing or spin-coating hole transport material on indium tin oxide (ITO) substrate to form a thin film of hole transport layer, (2) vacuum-depositing electron transport material to form a thin film of electron transport layer, and (3) vacuum-depositing cathodic layer containing Li, Ca, Ba, Mg, Ag, Al, or their alloy. The method for mixed-type OLED is characterized by vacuum-depositing or spin-coating hole transport material and electron transport material together to form a mixed layer. The fabricated OLED can emit lights with different colors.

IT 943996-10-9

RL: TEM (Technical or engineered material use); USES (Uses)  
(method for fabricating interface-type or mixed-type organic  
light-emitting diode with adjustable luminous color)

RN 943996-10-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(3',4',5'-triphenyl[1,1':2',1''-  
terphenyl]-4-yl)- (CA INDEX NAME)



L14 ANSWER 8 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:762038 CAPLUS

DOCUMENT NUMBER: 147:153718

TITLE: Pyrazine derivative having bipolar property and its  
use as light emitting host material in light emitting  
element to improve light emitting efficiency and  
application to display device and electronic device

INVENTOR(S): Murata, Hiroko; Egawa, Masakazu; Nakashima, Harue;  
Kawakami, Sachiko; Ohsawa, Nobuharu; Seo, Satoshi  
Japan

PATENT ASSIGNEE(S):  
SOURCE: U.S. Pat. Appl. Publ., 119pp.

CODEN: USXXCO

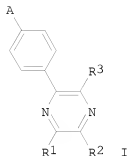
DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 2007161793	A1	20070712	US 2006-645286	20061222
JP 2007197426	A	20070809	JP 2006-345743	20061222
PRIORITY APPLN. INFO.:			JP 2005-378811	A 20051228
GI				



AB It is an object to provide a novel material having a bipolar property, a light emitting element provided with the novel material, and a display device that includes the light emitting element. It is an object to provide a pyrazine derivative represented by the general formula I [R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> = H, alkyl, aryl; A = -N(Ar<sup>1</sup>)(Ar<sup>2</sup>); Ar<sup>1</sup>, Ar<sup>2</sup> = aryl]. The synthetic examples of the pyrazine derivs. are given.

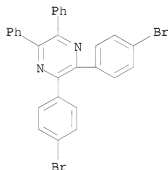
IT 943442-75-9P 943442-81-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(pyrazine derivative synthesis; pyrazine derivative having bipolar property and its use as light emitting host material in light emitting element to improve light emitting efficiency and application to display device and electronic device)

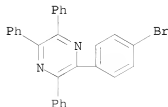
RN 943442-75-9 CAPLUS

CN Pyrazine, 2,3-bis(4-bromophenyl)-5,6-diphenyl- (CA INDEX NAME)



RN 943442-81-7 CAPLUS

CN Pyrazine, 2-(4-bromophenyl)-3,5,6-triphenyl- (CA INDEX NAME)



IT 943442-77-1P 943442-79-3P 943442-83-9P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

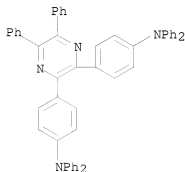
(pyrazine derivative synthesis; pyrazine derivative having bipolar property

and

its use as light emitting host material in light emitting element to improve light emitting efficiency and application to display device and electronic device)

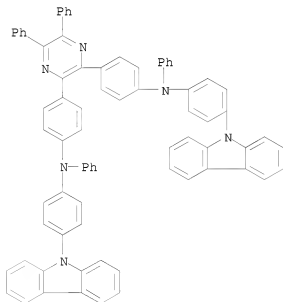
RN 943442-77-1 CAPLUS

CN Benzenamine, 4,4'-(5,6-diphenyl-2,3-pyrazinediyl)bis[N,N-diphenyl- (CA INDEX NAME)



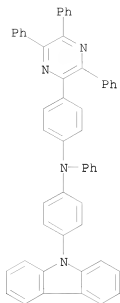
RN 943442-79-3 CAPLUS

CN Benzenamine, 4,4'-(5,6-diphenyl-2,3-pyrazinediyl)bis[N-[4-(9H-carbazol-9-yl)phenyl]-N-phenyl- (CA INDEX NAME)



RN 943442-83-9 CAPLUS

CN Benzenamine, N-[4-(9H-carbazol-9-yl)phenyl]-N-phenyl-4-(3,5,6-triphenyl-2-pyrazinyl)- (CA INDEX NAME)



L14 ANSWER 9 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:697686 CAPLUS

DOCUMENT NUMBER: 147:128780

TITLE: Organic electroluminescent devices showing high-purity red emission, displays therewith, and macromolecular materials therefor

INVENTOR(S): Otsubo, Akihiro; Takahashi, Yoshiaki

PATENT ASSIGNEE(S): Showa Denko K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 31pp.

CODEN: JKXXAF

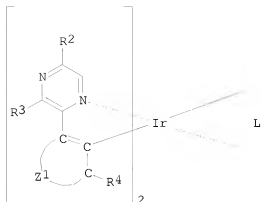
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2007161859	A	20070628	JP 2005-359274	20051213
PRIORITY APPLN. INFO.: GI			JP 2005-359274	20051213



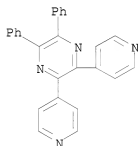
I

AB The materials are polymers having repeating units derived from Ir complex I [R1-R4 = H, OH, X1, OX2, SX3, OCOX4, CO2X5, SiX6X7X8, NH2, NHX9, NX10X11 (X1-X11 = C1-22 alkyl, C6-21 aryl, C2-20 heteroaryl, C7-21 aralkyl); Z1 = 5- or 6-membered (hetero)cycle-forming atomic group; L = polymerizable group-containing bidentate ligand of monovalent anion]. Long-life organic electroluminescent devices (LED) having the materials in 21 of organic macromol. layers are also claimed. Displays and surface-emitting light sources employing the LED are further claimed.

IT 942493-86-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (iridium complex-copolymd. polymers for organic electroluminescent devices with high red color purity)

RN 942493-86-9 CAPLUS

CN Pyrazine, 2,3-diphenyl-5,6-di-4-pyridinyl- (CA INDEX NAME)



L14 ANSWER 10 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

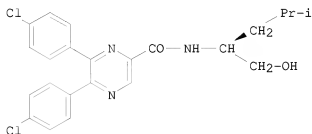
ACCESSION NUMBER: 2007:684697 CAPLUS

DOCUMENT NUMBER: 147:249870

TITLE: Discovery of pyrazine carboxamide CB1 antagonists: The introduction of a hydroxyl group improves the pharmaceutical properties and in vivo efficacy of the series

AUTHOR(S): Ellsworth, Bruce A.; Wang, Ying; Zhu, Yeheng; Pendri, Annapurna; Gerritz, Samuel W.; Sun, Chongqing; Carlson, Kenneth E.; Kang, Liya; Baska, Rose A.; Yang, Yifan; Huang, Qi; Burford, Neil T.; Cullen, Mary Jane; Johnghar, Susan; Behnia, Kamelia; Pelleymounter, Mary Ann; Washburn, William N.; Ewing, William R.

CORPORATE SOURCE: Pharmaceutical Research Institute, Bristol Myers  
Squibb Co., Princeton, NJ, 08543, USA  
SOURCE: Bioorganic & Medicinal Chemistry Letters (2007),  
17(14), 3978-3982  
CODEN: BMCLE8; ISSN: 0960-894X  
PUBLISHER: Elsevier Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI



I

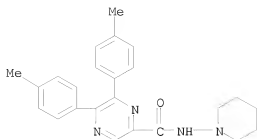
AB Structure-activity relationships for a series of pyrazine carboxamide CB1 antagonists are reported. Pharmaceutical properties of the series are improved via inclusion of hydroxyl-containing sidechains. This structural modification sufficiently improved ADME properties of an orally inactive series such that food intake reduction was achieved in rat feeding models. Compound 35 (I) elicits a 46% reduction in food intake in ad libitum fed rats 4-h post-dose.

IT 548759-94-0P 548760-05-0P 845728-52-1P  
845728-53-2P 845728-54-3P 845728-55-4P  
845728-56-5P 845728-57-6P 845728-58-7P  
845728-59-8P 845728-64-5P 845728-70-3P  
945756-93-4P 945756-94-5P 945756-95-6P  
945756-96-7P 945756-97-8P 945756-98-9P  
945756-99-0P 945757-00-6P 945757-01-7P  
945757-02-8P 945757-03-9P 945757-04-0P  
945757-05-1P 945757-06-2P 945757-07-3P  
945757-08-4P 945757-09-5P 945757-10-8P  
945757-11-9P 945757-12-0P

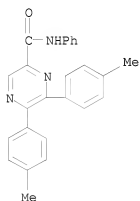
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(pyrazine carboxamide CB1 antagonists)

RN 548759-94-0 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-1-piperidinyl- (CA INDEX NAME)

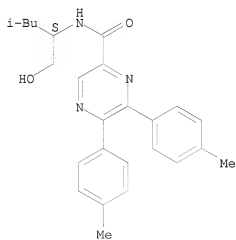


RN 548760-05-0 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-phenyl- (CA INDEX NAME)



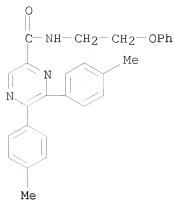
RN 845728-52-1 CAPLUS  
 CN 2-Pyrazinecarboxamide, N-[(1S)-1-(hydroxymethyl)-3-methylbutyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

Absolute stereochemistry.



RN 845728-53-2 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-(2-phenoxyethyl)- (CA INDEX NAME)

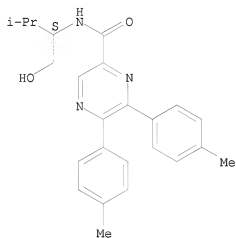




RN 845728-54-3 CAPLUS

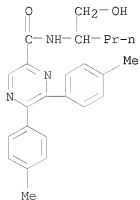
CN 2-Pyrazinecarboxamide, N-[(1S)-1-(hydroxymethyl)-2-methylpropyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

Absolute stereochemistry.



RN 845728-55-4 CAPLUS

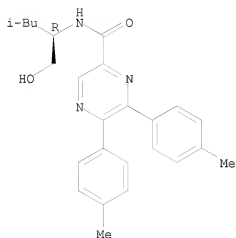
CN 2-Pyrazinecarboxamide, N-[1-(hydroxymethyl)butyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



RN 845728-56-5 CAPLUS

CN 2-Pyrazinecarboxamide, N-[(1R)-1-(hydroxymethyl)-3-methylbutyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

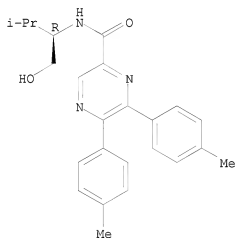
Absolute stereochemistry.



RN 845728-57-6 CAPLUS

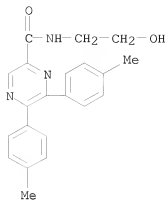
CN 2-Pyrazinecarboxamide, N-[(1R)-1-(hydroxymethyl)-2-methylpropyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

Absolute stereochemistry.



RN 845728-58-7 CAPLUS

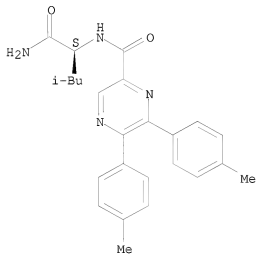
CN 2-Pyrazinecarboxamide, N-(2-hydroxyethyl)-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



RN 845728-59-8 CAPLUS

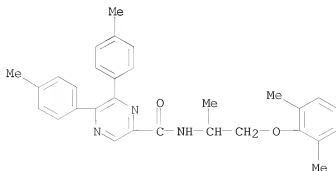
CN Pyrazinecarboxamide, N-[(1S)-1-(aminocarbonyl)-3-methylbutyl]-5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 845728-64-5 CAPLUS

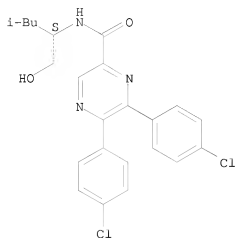
CN 2-Pyrazinecarboxamide, N-[2-(2,6-dimethylphenoxy)-1-methylethyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



RN 845728-70-3 CAPLUS

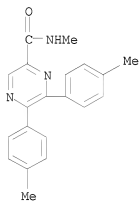
CN 2-Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-[(1S)-1-(hydroxymethyl)-3-methylbutyl]- (CA INDEX NAME)

Absolute stereochemistry.



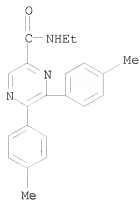
RN 945756-93-4 CAPLUS

CN 2-Pyrazinecarboxamide, N-methyl-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



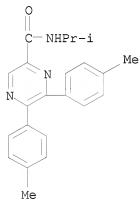
RN 945756-94-5 CAPLUS

CN 2-Pyrazinecarboxamide, N-ethyl-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



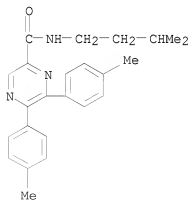
RN 945756-95-6 CAPLUS

CN 2-Pyrazinecarboxamide, N-(1-methylethyl)-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



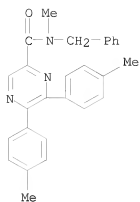
RN 945756-96-7 CAPLUS

CN 2-Pyrazinecarboxamide, N-(3-methylbutyl)-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

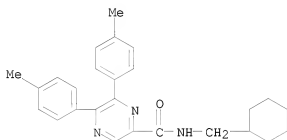


RN 945756-97-8 CAPLUS

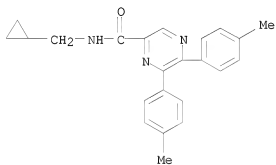
CN 2-Pyrazinecarboxamide, N-methyl-5,6-bis(4-methylphenyl)-N-(phenylmethyl)- (CA INDEX NAME)



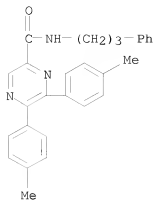
RN 945756-98-9 CAPLUS  
 CN 2-Pyrazinecarboxamide, N-(cyclohexylmethyl)-5,6-bis(4-methylphenyl)- (CA  
 INDEX NAME)



RN 945756-99-0 CAPLUS  
 CN 2-Pyrazinecarboxamide, N-(cyclopropylmethyl)-5,6-bis(4-methylphenyl)- (CA  
 INDEX NAME)

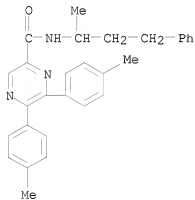


RN 945757-00-6 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-(3-phenylpropyl)- (CA  
 INDEX NAME)



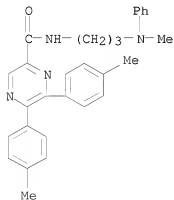
RN 945757-01-7 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-(1-methyl-3-phenylpropyl)-  
(CA INDEX NAME)



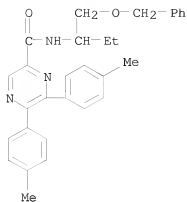
RN 945757-02-8 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-[3-(methylphenylamino)propyl]- (CA INDEX NAME)



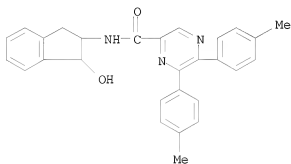
RN 945757-03-9 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-[1-(phenylmethoxy)methyl]propyl]- (CA INDEX NAME)



RN 945757-04-0 CAPLUS

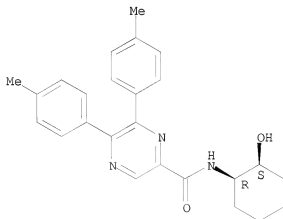
CN 2-Pyrazinecarboxamide, N-(2,3-dihydro-1-hydroxy-1H-inden-2-yl)-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



RN 945757-05-1 CAPLUS

CN 2-Pyrazinecarboxamide, N-[(1R,2S)-2-hydroxycyclohexyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

Absolute stereochemistry.

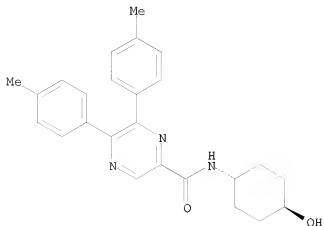


RN 945757-06-2 CAPLUS

CN 2-Pyrazinecarboxamide, N-(trans-4-hydroxycyclohexyl)-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

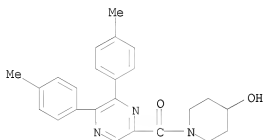


Relative stereochemistry.



RN 945757-07-3 CAPLUS

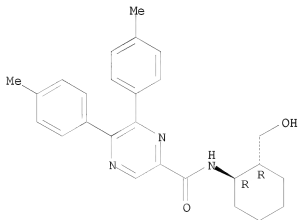
CN Methanone, [5,6-bis(4-methylphenyl)-2-pyrazinyl](4-hydroxy-1-piperidinyl)-  
(CA INDEX NAME)



RN 945757-08-4 CAPLUS

CN 2-Pyrazinecarboxamide, N-[(1R,2R)-2-(hydroxymethyl)cyclohexyl]-5,6-bis(4-methylphenyl)-, rel- (CA INDEX NAME)

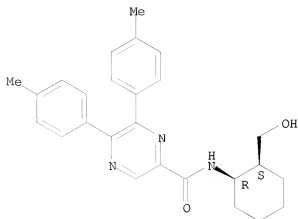
Relative stereochemistry.



RN 945757-09-5 CAPLUS

CN 2-Pyrazinecarboxamide, N-[(1R,2S)-2-(hydroxymethyl)cyclohexyl]-5,6-bis(4-methylphenyl)-, rel- (CA INDEX NAME)

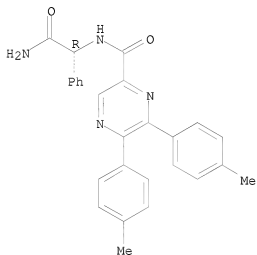
Relative stereochemistry.



RN 945757-10-8 CAPLUS

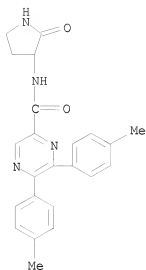
CN 2-Pyrazinecarboxamide, N-[(1R)-2-amino-2-oxo-1-phenylethyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

Absolute stereochemistry.

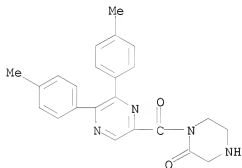


RN 945757-11-9 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-(2-oxo-3-pyrrolidinyl)- (CA INDEX NAME)

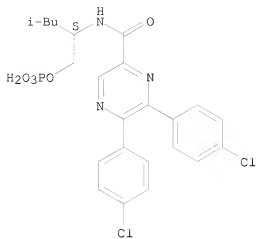


RN 945757-12-0 CAPLUS  
 CN 2-Piperazinone, 1-[[5,6-bis(4-methylphenyl)-2-pyrazinyl]carbonyl]- (CA INDEX NAME)

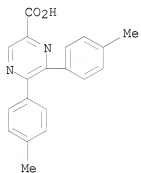


IT 845728-81-6P  
 RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (spn pyrazine carboxamide CB1 antagonists)  
 RN 845728-81-6 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-[(1S)-3-methyl-1-[(phosphonooxy)methyl]butyl]- (9CI) (CA INDEX NAME)

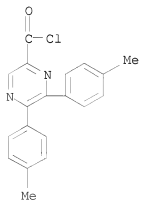
Absolute stereochemistry.



IT	548760-12-9P 945757-15-3P	
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)	
	(spn pyrazine carboxamide CB1 antagonists)	
RN	548760-12-9 CAPLUS	
CN	2-Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)	



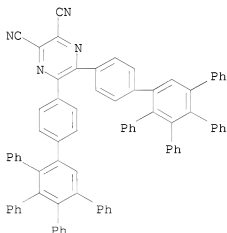
RN 945757-15-3 CAPLUS  
CN 2-Pyrazinecarbonyl chloride, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)



REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 11 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2007:570687 CAPLUS  
DOCUMENT NUMBER: 147:176539  
TITLE: High-efficiency blue light-emitting diodes based on a polyphenylphenyl compound with strong electron-accepting groups  
AUTHOR(S): Xu, Xijun; Chen, Shiyan; Yu, Gui; Di, Chong'an; You, Han; Ma, Dongge; Liu, Yunqi  
CORPORATE SOURCE: Beijing National Laboratory for Molecular Sciences Key Laboratory of Organic Solids Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China  
SOURCE: Advanced Materials (Weinheim, Germany) (2007), 19(9), 1281-1285  
CODEN: ADVMEW; ISSN: 0935-9648  
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The synthesis and characterization of 2 new polyphenylphenyl compds. is reported. One compound (CPP) acts as a blue light-emitting material, but contains strong electron-accepting groups that form exciplexes with electron-donating arylamines that are widely used as hole-transporting materials. Inserting a layer of the other compound into the organic light-emitting diodes (see figure) suppresses the formation of exciplexes, and gives high-efficiency blue-light emission from the CPP layer.  
IT 943996-10-9, 2,3-Dicyano-5,6-di(4-(2,3,4,5-tetraphenylphenyl)phenyl)pyrazine  
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(high-efficiency blue LED based on polyphenylphenyl compound with strong electron-accepting groups)  
RN 943996-10-9 CAPLUS  
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(3',4',5'-triphenyl[1,1':2',1''-terphenyl]-4-yl)- (CA INDEX NAME)



REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 12 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2007:526192 CAPLUS

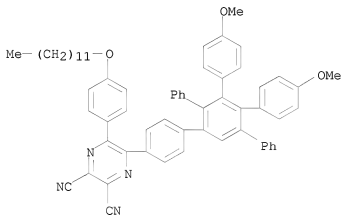
DOCUMENT NUMBER: 147:448388  
 TITLE: Characterization and optical properties of tetrapyrazinoporphyrazines with phenylene dendron group  
 AUTHOR(S): Jaung, Jae-Yun  
 CORPORATE SOURCE: Department of Polymer and Textile Engineering, Hanyang University, Seoul, 133-791, S. Korea  
 SOURCE: Dyes and Pigments (2007), 75(2), 420-425  
 CODEN: DYPIDX; ISSN: 0143-7208  
 PUBLISHER: Elsevier Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The treatment of the ethynyl compound with one equivalent of 3,4-bis-(4-methoxyphenyl)-2,5-diphenyl-cyclopenta-2,4-dienone in degassed p-xylene afforded the corresponding 2,3-dicyanopyrazine derivs. containing a phenylene dendron group. The absorption spectra of the tetrapyrazinoporphyrazinato copper complexes (5) with long alkyl groups dramatically changed due to mol. aggregation depending on the polarity of the solvent. The variation in their aggregation behaviors depending on the polarity of the solvent was well correlated with their chemical structures.

IT 851085-25-1P 851085-26-2P 874913-81-2P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (characterization and optical properties of tetrapyrazinoporphyrazines with phenylene dendron group)

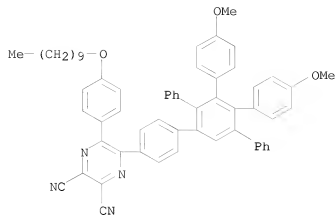
RN 851085-25-1 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(dodecyloxy)phenyl]- (9CI) (CA INDEX NAME)



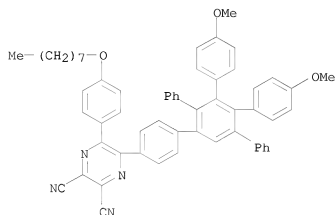
RN 851085-26-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(decyloxy)phenyl]- (9CI) (CA INDEX NAME)



RN 874913-81-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(octyloxy)phenyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 13 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:497111 CAPLUS

DOCUMENT NUMBER: 147:132892

TITLE: Scaffold hopping, synthesis and structure-activity relationships of 5,6-diaryl-pyrazine-2-amide derivatives: A novel series of CB1 receptor antagonists

AUTHOR(S): Bostroem, Jonas; Berggren, Kristina; Elebring, Thomas; Greasley, Peter J.; Wilstermann, Michael

CORPORATE SOURCE: Lead Generation Department, AstraZeneca R&D Moelndal, Moelndal, S-431 83, Swed.

SOURCE: Bioorganic & Medicinal Chemistry (2007), 15(12), 4077-4084

CODEN: BMECEP; ISSN: 0968-0896

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 147:132892

AB A scaffold hopping approach has been exploited to design a novel class of cannabinoid (CB1) receptor antagonists for the treatment of obesity. On the basis of shape-complementarity and synthetic feasibility the central fragment, a methylpyrazole, in Rimonabant was replaced by a pyrazine. The synthesis and CB1 antagonistic activities of a new series of 5,6-diaryl-pyrazine-2-amide derivs. are described. Several compds. showed antagonist potency below 10 nM for the CB1 receptor.

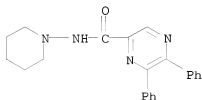
IT 548759-92-8P 548759-93-9P 548759-94-0P  
 548759-95-1P 548759-96-2P 548759-97-3P  
 548759-99-5P 548760-00-5P 548760-01-6P  
 548760-02-7P 548760-03-8P 548760-04-9P  
 548760-05-0P 548760-06-1P 548760-07-2P  
 548760-08-3P 548760-09-4P 548760-10-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(synthesis and structure-activity relationships of aryl-pyrazineamide derivs. as CB1 receptor antagonists)

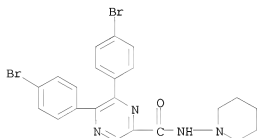
RN 548759-92-8 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-diphenyl-N-1-piperidinyl- (CA INDEX NAME)



RN 548759-93-9 CAPLUS

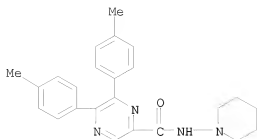
CN 2-Pyrazinecarboxamide, 5,6-bis(4-bromophenyl)-N-1-piperidinyl- (CA INDEX NAME)



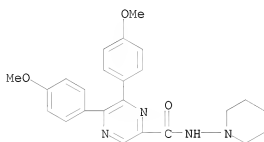
RN 548759-94-0 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-1-piperidinyl- (CA INDEX NAME)

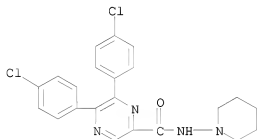




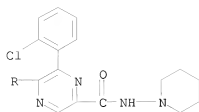
RN 548759-95-1 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(4-methoxyphenyl)-N-1-piperidinyl- (CA INDEX NAME)



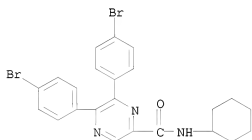
RN 548759-96-2 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



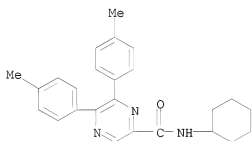
RN 548759-97-3 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(2-chlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



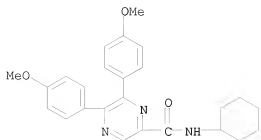
RN 548759-99-5 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(4-bromophenyl)-N-cyclohexyl- (CA INDEX  
 NAME)



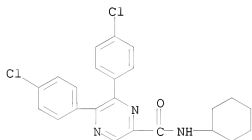
RN 548760-00-5 CAPLUS  
 CN 2-Pyrazinecarboxamide, N-cyclohexyl-5,6-bis(4-methylphenyl)- (CA INDEX  
 NAME)



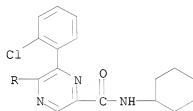
RN 548760-01-6 CAPLUS  
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 NAME)



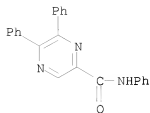
RN 548760-02-7 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-cyclohexyl- (CA INDEX NAME)



RN 548760-03-8 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(2-chlorophenyl)-N-cyclohexyl- (CA INDEX NAME)

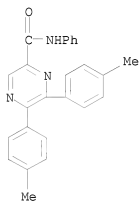


RN 548760-04-9 CAPLUS  
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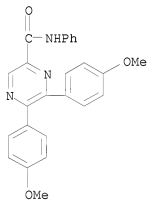
RN 548760-05-0 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-phenyl- (CA INDEX NAME)



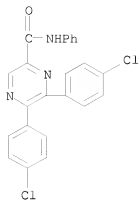
RN 548760-06-1 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methoxyphenyl)-N-phenyl- (CA INDEX NAME)



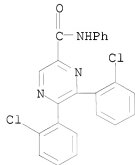
RN 548760-07-2 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-phenyl- (CA INDEX NAME)



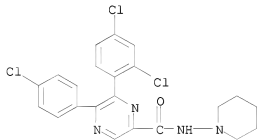
RN 548760-08-3 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(2-chlorophenyl)-N-phenyl- (CA INDEX NAME)



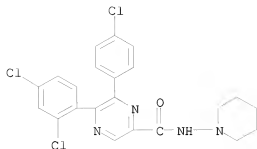
RN 548760-09-4 CAPLUS

CN 2-Pyrazinecarboxamide, 5-(4-chlorophenyl)-6-(2,4-dichlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)

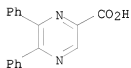


RN 548760-10-7 CAPLUS

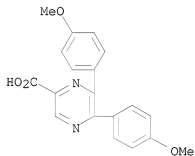
CN 2-Pyrazinecarboxamide, 6-(4-chlorophenyl)-5-(2,4-dichlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



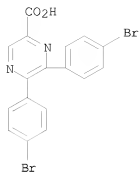
IT 13515-07-6P 122956-28-9P 548760-11-8P  
 548760-12-9P 548760-13-0P 548760-14-1P  
 548760-15-2P 548760-16-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (synthesis and structure-activity relationships of aryl-pyrazineamide  
 derivs. as CB1 receptor antagonists)  
 RN 13515-07-6 CAPLUS  
 CN 2-Pyrazinecarboxylic acid, 5,6-diphenyl- (CA INDEX NAME)



RN 122956-28-9 CAPLUS  
 CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)

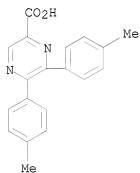


RN 548760-11-8 CAPLUS  
 CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



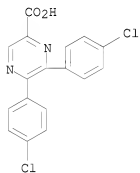
RN 548760-12-9 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)



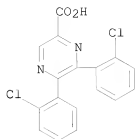
RN 548760-13-0 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)

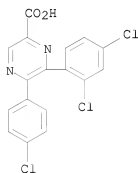


RN 548760-14-1 CAPLUS

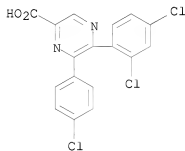
CN 2-Pyrazinecarboxylic acid, 5,6-bis(2-chlorophenyl)- (CA INDEX NAME)



RN 548760-15-2 CAPLUS  
 CN 2-Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-6-(2,4-dichlorophenyl)- (CA  
 INDEX NAME)



RN 548760-16-3 CAPLUS  
 CN 2-Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-5-(2,4-dichlorophenyl)- (CA  
 INDEX NAME)



REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

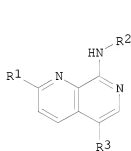
L14 ANSWER 14 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2007:384758 CAPLUS  
 DOCUMENT NUMBER: 146:358824  
 TITLE: Preparation of naphthyridinamine derivatives as  
 metabotropic glutamate receptor 5 (mGluR5) antagonists  
 for the treatment of CNS disorders  
 Jaeschke, Georg; Kolczewski, Sabine; Porter, Richard  
 Hugh Philip; Schnider, Patrick; Vieira, Eric  
 Switz.  
 INVENTOR(S):  
 PATENT ASSIGNEE(S):  
 SOURCE: U.S. Pat. Appl. Publ., 37pp.



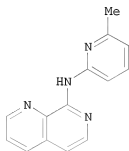
DOCUMENT TYPE: CODEN: USXXCO  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION: English

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2007078155	A1	20070405	US 2006-529992	20060928
WO 2007039512	A1	20070412	WO 2006-EP66709	20060925
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRIORITY APPLN. INFO.: EP 2005-109241 A 20051005  
 OTHER SOURCE(S): MARPAT 146:358824  
 GI



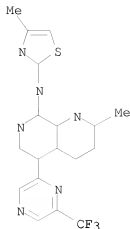
I



II

AB Title compds. I [wherein R1 = H, halo, alkoxy, etc.; R2 = (un)substituted aryl or 5/6-membered heteroaryl; R3 = H, alkyl, (un)substituted aryl, etc.] and pharmaceutically acceptable salts thereof were prepared as metabotropic glutamate receptor 5 (mGluR5) antagonists. For instance, Pd-mediated coupling of 8-chloro-[1,7]naphthyridine with 2-amino-6-methylpyridine gave naphthyridinylamine II in 34% yield. Representative I had Ki < 200 nM (Ki = 25 nM for II). The invented compds. are useful for the treatment of mGluR5-mediated diseases, such as CNS disorders.

IT 930303-52-9P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (antagonist; preparation of naphthyridinamines as metabotropic glutamate receptor 5 (mGluR5) antagonists for treatment of CNS disorders)  
 RN 930303-52-9 CAPLUS  
 CN 1,7-Naphthyridin-8-amine, 2-methyl-N-(4-methyl-2-thiazolyl)-5-[6-(trifluoromethyl)-2-pyrazinyl]- (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

L14 ANSWER 15 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:228705 CAPLUS

DOCUMENT NUMBER: 146:463739

TITLE: Synthesis and optical/thermal properties of low molecular mass V-shaped materials based on 2,3-dicyanopyrazine

AUTHOR(S): Cristiano, Rodrigo; Westphal, Eduard; Bechtold, Ivan H.; Bortoluzzi, Adailton J.; Gallardo, Hugo

CORPORATE SOURCE: Departamento de Química, Universidade Federal de Santa Catarina, Florianópolis, SC, 88040-900, Brazil

SOURCE: Tetrahedron (2007), 63(13), 2851-2858

CODEN: TETRAB; ISSN: 0040-4020

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:463739

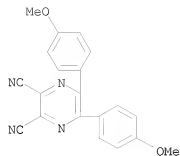
AB A novel series of luminescent low mol. mass materials containing a 2,3-dicyanopyrazine central core were synthesized through an esterification reaction between diphenol 10 and different aromatic carboxylic acids 1-6, containing terminal long alkyl chains. They have a similar V-shaped geometry with lack of planarity between the two arms, confirmed by the X-ray structure of the central core. The optical and thermal properties of these compds. were evaluated. They show blue fluorescence in solution ( $\lambda_{\text{max}}$  440-480 nm) with quantum fluorescence yields ( $\Phi_F$ ) from 0.003 to 0.1 and Stokes shifts of around 90 nm. In solid state, optical band gaps ( $E_g$ ) were from 3.14 to 3.32 eV. Thin films of 11, 13, and 14 exhibited blue fluorescence ( $\lambda_{\text{max}}$  430-456 nm), and 12, 15, and 16 (more bulky) displayed green fluorescence ( $\lambda_{\text{max}}$  488-512 nm). Most of the materials exhibited good thermal stability, exhibiting an amorphous glassy state after melting. Transparent amorphous films were easily obtained through spin coating and characterized by AFM anal.

IT 134071-89-9P

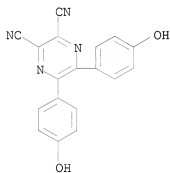
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (crystal structure; synthesis and optical/thermal properties of low mol. mass V-shaped materials based on 2,3-dicyanopyrazine)

RN 134071-89-9 CAPLUS

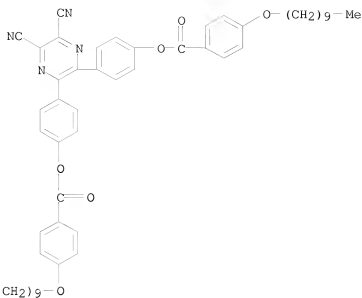
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



IT 935249-88-0P 935249-89-1P 935249-90-4P  
 935249-91-5P 935249-92-6P 935249-93-7P  
 935249-94-8P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis and optical/thermal properties of low mol. mass V-shaped  
 materials based on 2,3-dicyanopyrazine)  
 RN 935249-88-0 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-hydroxyphenyl)- (CA INDEX NAME)

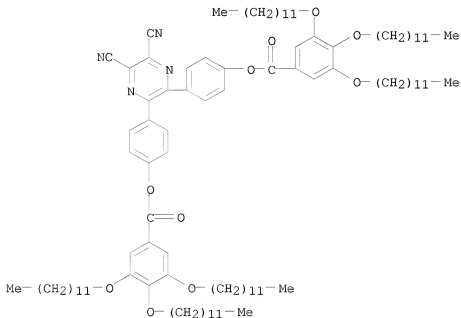


RN 935249-89-1 CAPLUS  
 CN Benzoic acid, 4-(decyloxy)-, 1,1'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-  
 phenylene] ester (CA INDEX NAME)



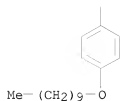
RN 935249-90-4 CAPLUS

CN Benzoic acid, 3,4,5-tris(dodecyloxy)-, 1,1'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene] ester (CA INDEX NAME)

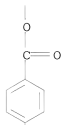


RN 935249-91-5 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(decyloxy)-, 4,4'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene] ester (CA INDEX NAME)

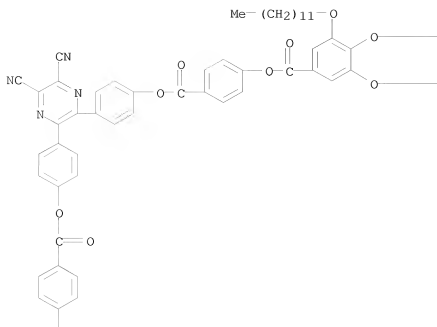


RN 935249-92-6 CAPLUS  
CN Benzoic acid, 4-[[4-(decyloxy)benzoyl]oxy]-, 1,1'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene] ester (CA INDEX NAME)


$$\text{Me}-(\text{CH}_2)_9-\text{O}$$

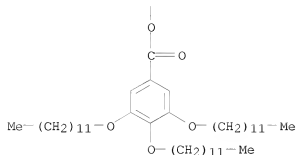
RN 935249-93-7 CAPLUS

CN Benzoic acid, 4-[[3,4,5-tris(dodecyloxy)benzoyl]oxy]-,  
1,1'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene] ester (CA INDEX  
NAME)



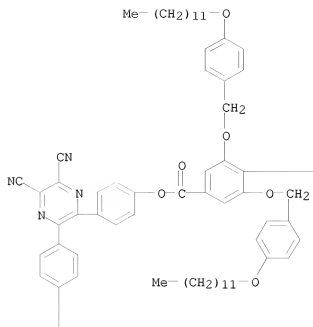
— (CH<sub>2</sub>)<sub>11</sub>—Me

— (CH<sub>2</sub>)<sub>11</sub>—Me



RN 935249-94-8 CAPLUS  
 CN Benzoic acid, 3,4,5-tris[[4-(dodecyloxy)phenyl]methoxy]-,  
 1,1'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene] ester (CA INDEX  
 NAME)

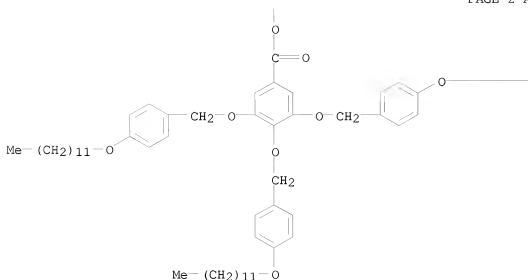
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PAGE 1-B



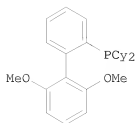




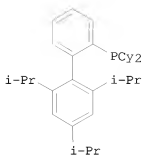
Me-(CH<sub>2</sub>)<sub>11</sub>-O-

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 16 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2007:216805 CAPLUS  
 DOCUMENT NUMBER: 146:462153  
 TITLE: Highly Efficient Monophosphine-Based Catalyst for the Palladium-Catalyzed Suzuki-Miyaura Reaction of Heteroaryl Halides and Heteroaryl Boronic Acids and Esters  
 AUTHOR(S): Billingsley, Kelvin; Buchwald, Stephen L.  
 CORPORATE SOURCE: Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA  
 SOURCE: Journal of the American Chemical Society (2007), 129(11), 3358-3366  
 CODEN: JACSAT; ISSN: 0002-7863  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 146:462153  
 GI



I



II

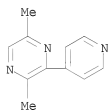
AB A highly active and efficient catalyst system derived from a palladium precatalyst and monophosphine ligands I or II for the Suzuki-Miyaura cross-coupling reaction of heteroaryl boronic acids and esters has been developed. This method allows for the preparation of a wide variety of heterobiaryls in good to excellent yields and displays a high level of activity for the coupling of heteroaryl chlorides as well as hindered aryl and heteroaryl halides. Specific factors that govern the efficacy of the transformation for certain heterocyclic motifs were also investigated.

IT 902745-41-9P 935278-72-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of heterobiaryls by Suzuki-Miyaura cross-coupling reaction of heteroaryl boronic acids and esters with aryl or heteroaryl halides catalyzed by a palladium precatalyst and monophosphine ligand)

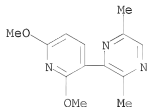
RN 902745-41-9 CAPLUS

CN Pyrazine, 2,5-dimethyl-3-(4-pyridinyl)- (CA INDEX NAME)



RN 935278-72-1 CAPLUS

CN Pyrazine, 3-(2,6-dimethoxy-3-pyridinyl)-2,5-dimethyl- (CA INDEX NAME)



REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 17 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:193398 CAPLUS

DOCUMENT NUMBER: 146:422090

TITLE: Direct C-C coupling of ferrocenyllithium and azaheterocycles by nucleophilic substitution of hydrogen - synthesis of mono- and 1,1'-diazinylferrocenes

AUTHOR(S): Chupakhin, Oleg N.; Utepova, Irina A.; Kovalev, Igor S.; Rusinov, Vladimir L.; Starikova, Zoya A.

CORPORATE SOURCE: Institute of Organic Synthesis, Yekaterinburg, 620219, Russia

SOURCE: European Journal of Organic Chemistry (2007), (5), 857-862  
CODEN: EJOCFK; ISSN: 1434-193X  
Wiley-VCH Verlag GmbH & Co. KGaA

PUBLISHER: Journal

DOCUMENT TYPE: English

LANGUAGE: English

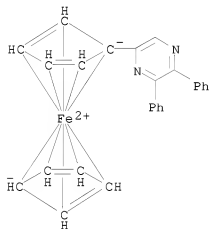
OTHER SOURCE(S): CASREACT 146:422090

AB A versatile synthetic protocol was proposed for the direct C-C coupling of a ferrocene fragment with various azaheterocycles in the absence of metal catalysts on the basis of nucleophilic substitution of hydrogen. Monosubstituted and disubstituted heteroannular azinyl derivs. of ferrocene were prepared in good yields. An X-ray crystal structure was done on 1-(pyrimidin-4-yl)ferrocene, which showed mol. forming centrosym. dimers through N...H-C hydrogen bonds and  $\pi$ - $\pi$  stacking interactions between pyrimidine rings.

IT 934371-55-8P, 2,3-Diphenylpyrazin-5-ylferrocene  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and structure of mono- and 1,1'-diazinylferrocenes via direct C-C coupling of ferrocenyllithium and azaheterocycles by nucleophilic substitution of hydrogen)

RN 934371-55-8 CAPLUS

CN Ferrocene, (5,6-diphenyl-2-pyrazinyl)- (CA INDEX NAME)



REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 18 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:174057 CAPLUS

DOCUMENT NUMBER: 146:251864

TITLE: Preparation of pyrazine derivatives as A2B receptor antagonists

INVENTOR(S): Vidal Juan, Bernat; Esteve Trias, Cristina; Soca Pueyo, Lidia; Eastwood, Paul Robert

PATENT ASSIGNEE(S): Almirall Prodesfarma, S.A., Spain

SOURCE: PCT Int. Appl., 198pp.

DOCUMENT TYPE: CODEN: PIXXD2  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: English  
 PATENT INFORMATION: 1

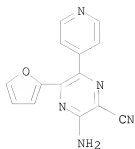
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007017096	A1	20070215	WO 2006-EP7318	20060725
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM ES 2270715 A1 20070401 ES 2005-1876 20050729 PRIORITY APPLN. INFO.: ES 2005-1876 A 20050729 OTHER SOURCE(S): MARPAT 146:251864 GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title compds. I [A = monocyclic or polycyclic aryl or heteroaryl optionally substituted by substituents selected from halo, alkyl, cycloalkyl, etc.; B = monocyclic nitrogen-containing heteroaryl group optionally substituted by substituents selected from halo, alkyl, cycloalkyl, etc.; R1 = -L-(CR'R'')n-G; L = bond, -(CO)-, -(CO)O-, etc.; R', R'' = H, alkyl; n = 0-6; G = H, alkyl, aryl, etc.; R2 = H, halo, alkyl, etc.; R2, R1 and the -NH- group to which R1 is attached may form a moiety selected from Q1 and Q2; Ra = H, halo, -OH, etc.; Rb = H, halo, alkyl, etc.], pharmaceutically acceptable salts and N-oxides thereof (except N-[6-(1-methyl-1H-indol-3-yl)-5-pyridin-2-ylpyrazin-2-yl]benzamide, N-[3-ethoxycarbonyl-6-(1-methyl-1H-indol-3-yl)-5-pyridin-2-yl]pyrazin-2-yl]benzamide and N-[3-ethoxycarbonyl-6-(1-methyl-1H-indol-3-yl)-5-pyridin-2-yl]pyrazin-2-yl]formamide) were prepared For example, PdCl2dppf catalyzed coupling reaction of 5-bromo-6-(3-fluorophenyl)pyrazin-2-amine, e.g., prepared from 2-amino-6-chloropyrazine in 2 steps, with 4-(4,4,5,5-tetramethyl-[1,3,2]dioxaborolan-2-yl)pyridine afforded compound II [X = H]. In adenosine 2B (A2B) receptor subtype competition radioligand binding assays using HEK293 cell, compound II [X = F] exhibited the Ki value of 4 nM. Compds. I are claimed useful for the treatment of asthma, bronchoconstriction, etc.

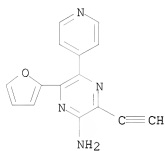
IT 925676-90-0P 925676-91-1P 925676-92-2P 925676-93-3P 925676-94-4P  
 RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation of pyrazine derivs. as A2B receptor antagonists for treatment of asthma and bronchoconstriction)

RN 925676-90-0 CAPLUS  
 CN 2-Pyrazinecarbonitrile, 3-amino-5-(2-furanyl)-6-(4-pyridinyl)- (CA INDEX NAME)



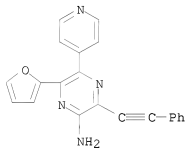
RN 925676-91-1 CAPLUS

CN 2-Pyrazinamine, 3-ethynyl-6-(2-furanyl)-5-(4-pyridinyl)- (CA INDEX NAME)



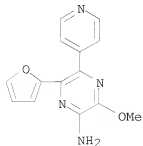
RN 925676-92-2 CAPLUS

CN 2-Pyrazinamine, 6-(2-furanyl)-3-(2-phenylethynyl)-5-(4-pyridinyl)- (CA INDEX NAME)

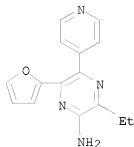


RN 925676-93-3 CAPLUS

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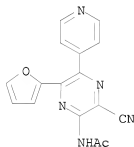


RN 925676-94-4 CAPLUS  
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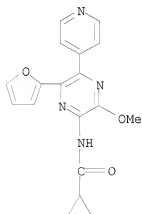


IT 925676-95-5P 925676-96-6P 925676-97-7P  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU  
(Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
(Uses)  
(preparation of pyrazine derivs. as A2B receptor antagonists for treatment  
of asthma and bronchoconstriction)

RN 925676-95-5 CAPLUS  
CN Acetamide, N-[3-cyano-6-(2-furanyl)-5-(4-pyridinyl)-2-pyrazinyl]- (CA  
INDEX NAME)

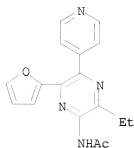


RN 925676-96-6 CAPLUS  
CN Cyclopropanecarboxamide, N-[6-(2-furanyl)-3-methoxy-5-(4-pyridinyl)-2-  
pyrazinyl]- (CA INDEX NAME)



RN 925676-97-7 CAPLUS

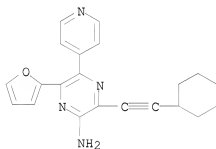
CN Acetamide, N-[3-ethyl-6-(2-furanyl)-5-(4-pyridinyl)-2-pyrazinyl]- (CA INDEX NAME)



IT 925678-48-4P 925678-54-2P 925678-55-3P  
 925678-56-4P 925678-57-5P 925678-58-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation of pyrazine derivs. as A2B receptor antagonists for treatment  
 of asthma and bronchoconstriction)

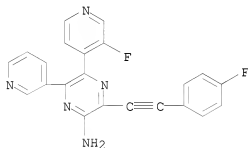
RN 925678-48-4 CAPLUS

CN 2-Pyrazinamine, 3-(2-cyclohexylethynyl)-6-(2-furanyl)-5-(4-pyridinyl)-  
 (CA INDEX NAME)



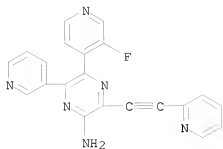
RN 925678-54-2 CAPLUS

CN 2-Pyrazinamine, 3-[2-(4-fluorophenyl)ethynyl]-5-(3-fluoro-4-pyridinyl)-6-  
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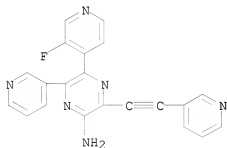
RN 925678-55-3 CAPLUS

CN 2-Pyrazinamine, 5-(3-fluoro-4-pyridinyl)-6-(3-pyridinyl)-3-[2-(2-  
 pyridinyl)ethynyl]- (CA INDEX NAME)



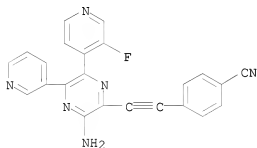
RN 925678-56-4 CAPLUS

CN 2-Pyrazinamine, 5-(3-fluoro-4-pyridinyl)-6-(3-pyridinyl)-3-[2-(3-pyridinyl)ethynyl]- (CA INDEX NAME)



RN 925678-57-5 CAPLUS

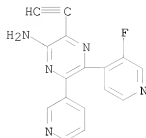
CN Benzonitrile, 4-[2-[3-amino-6-(3-fluoro-4-pyridinyl)-5-(3-pyridinyl)-2-pyrazinyl]ethynyl]- (CA INDEX NAME)



RN 925678-58-6 CAPLUS

CN 2-Pyrazinamine, 3-ethynyl-5-(3-fluoro-4-pyridinyl)-6-(3-pyridinyl)- (CA INDEX NAME)





REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 19 OF 399 CAPLUS COPYRIGHT 2007 ACS on SIN

ACCESSION NUMBER: 2007:84319 CAPLUS

DOCUMENT NUMBER: 146:184452

TITLE: Preparation of thioamides as selective CB1 antagonists for treating obesity, psychiatric and neurol. disorders

INVENTOR(S): Bostrom, Jonas; Cheng, Leifeng; Olsson, Roine

PATENT ASSIGNEE(S): Astrazeneca AB, Swed.; Astrazeneca UK Limited

SOURCE: PCT Int. Appl., 44pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

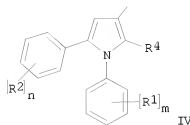
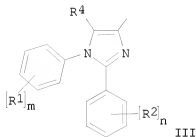
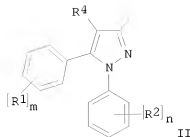
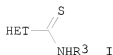
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007010222	A2	20070125	WO 2006-GB2638	20060717
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RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRIORITY APPLN. INFO.: GB 2005-14739 A 20050719

OTHER SOURCE(S): CASREACT 146:184452; MARPAT 146:184452

GI



AB The title compds. I [HET = II, III, IV, etc. (wherein R1 = alkoxy (optionally substituted by one or more F atoms), O(CH2)*p*Ph, etc.; *p* = 1-3; *m* = 0-3; R2 = alkyl, alkoxy, OH, etc.; *n* = 0-3; R4 = H, alkyl, alkoxy, etc.); R3 = (un)substituted cyclohexyl, piperidino, Ph, etc.], useful in the treatment of obesity, psychiatric and neurol. disorders, were prepared E.g., a multi-step synthesis of 4-{3-[(cyclohexylamino)carbonothioyl]-1-(2,4-dichlorophenyl)-4-methyl-1H-pyrazol-5-yl}phenyl propane-1-sulfonate, starting from 4-hydroxypropiofenone, was given. Compds. I are active at the CB1 receptor (IC50 < 1 μM). The invention also relates to methods for therapeutic use of compds. I and to pharmaceutical compns. containing them.

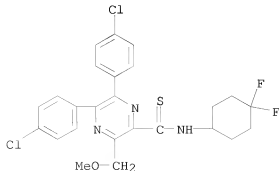
IT 921628-24-2P 921628-25-3P 921628-26-4P  
921628-27-5P 921628-28-6P 921628-29-7P  
921628-30-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of thioamides as CB1 antagonists for treating obesity, psychiatric and neurol. disorders)

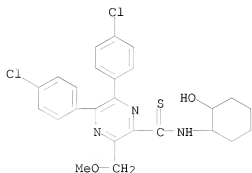
RN 921628-24-2 CAPLUS

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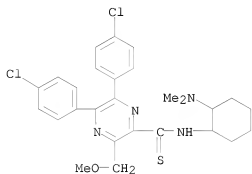
RN 921628-25-3 CAPLUS

CN 2-Pyrazinecarbothioamide, 5,6-bis(4-chlorophenyl)-N-(2-hydroxycyclohexyl)-3-(methoxymethyl)- (CA INDEX NAME)



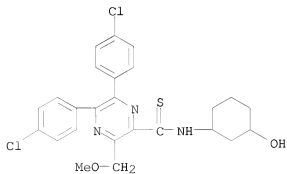
RN 921628-26-4 CAPLUS

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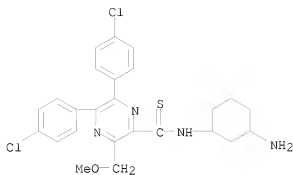
RN 921628-27-5 CAPLUS

CN 2-Pyrazinecarbothioamide, 5,6-bis(4-chlorophenyl)-N-(3-hydroxycyclohexyl)-3-(methoxymethyl)- (CA INDEX NAME)



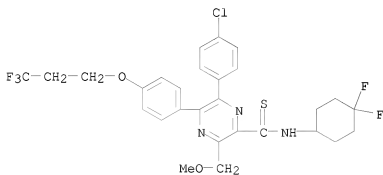
RN 921628-28-6 CAPLUS

CN 2-Pyrazinecarbothioamide, N-(3-aminocyclohexyl)-5,6-bis(4-chlorophenyl)-3-(methoxymethyl)- (CA INDEX NAME)



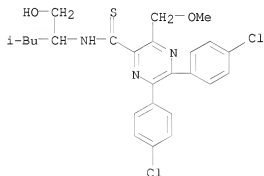
RN 921628-29-7 CAPLUS

CN 2-Pyrazinecarbothioamide, 6-(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-(methoxymethyl)-5-[4-(3,3,3-trifluoropropoxy)phenyl]- (CA INDEX NAME)



RN 921628-30-0 CAPLUS

CN 2-Pyrazinecarbothioamide, 5,6-bis(4-chlorophenyl)-N-[1-(hydroxymethyl)-3-methylbutyl]-3-(methoxymethyl)- (CA INDEX NAME)



L14 ANSWER 20 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:1296274 CAPLUS

DOCUMENT NUMBER: 146:260905

TITLE: New Organic Light-Emitting Materials: Synthesis, Thermal, Photophysical, Electrochemical, and Electroluminescent Properties

AUTHOR(S): Chen, Shiyun; Xu, Xinjun; Liu, Yunqi; Qiu, Wenfeng; Yu, Gui; Wang, Huaping; Zhu, Daoben

CORPORATE SOURCE: Key Laboratory of Organic Solids, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Journal of Physical Chemistry C (2007), 111(2), 1029-1034  
CODEN: JPCCCK; ISSN: 1932-7447

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

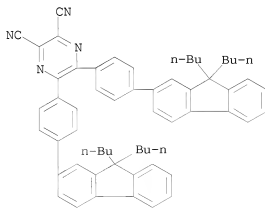
OTHER SOURCE(S): CASREACT 146:260905

AB A new series of organic-light-emitting materials, 6,7-dimethyl-2,3-bis(4'-diphenylaminobiphenyl-4-yl)quinoxaline (MAPQ), 6,7-dimethyl-2,3-bis[4-(9,9-dibutyl-9H-fluoren-2-yl)phenyl]quinoxaline (MFPQ), 2,3-dicyano-5,6-bis[4-(9,9-dibutyl-9H-fluoren-2-yl)phenyl]pyrazine (CFPP), and 6,7-dicyano-2,3-bis[4-(9,9-dibutyl-9H-fluoren-2-yl)phenyl]quinoxaline (CFPQ), have been synthesized in high yields and fully characterized. These compds. have high thermal stability and show bright-light-emission varying from blue to green owing to the different strengths of the donor and acceptor. Moreover, good reversible oxidation or reduction waves were observed except for compound MFPQ due to the potential limitation of the solvent we used, which suggests these compds. have potential applications for hole/electron transportation. Organic light-emitting diodes were fabricated in a facile nondoped configuration based on these materials. Compared to MFPQ, CFPP, and CFPQ, the higher lying HOMO level of MAPQ facilitates more efficient hole injection/transport and a higher charge-recombination rate; thus, the device based on MAPQ shows the highest luminous efficiency. For compds. CFPP and CFPQ, the LUMO levels are obviously decreased because of the incorporation of electron-accepting cyano group, so the devices based on these two compds. display better electron transportation/injection properties and better performances than those of MFPQ. These results demonstrate that high-performance light-emitting devices can be achieved from intramol. charge-transfer emission.

IT 919475-08-4P  
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(light emitting layer; synthesis, thermal, photophys., electrochem., and electroluminescent properties of donor-acceptor quinoxaline and pyrazine derivs.)

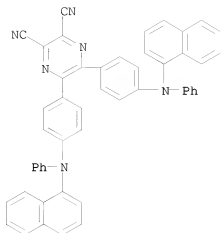
RN 919475-08-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(9,9-dibutyl-9H-fluoren-2-yl)phenyl]-(CA INDEX NAME)

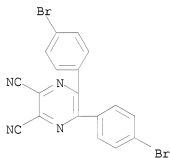


REFERENCE COUNT: 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 21 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:1262121 CAPLUS  
 DOCUMENT NUMBER: 146:251438  
 TITLE: Photoluminescence and electroluminescence of a novel green-yellow emitting material-5,6-Bis-[4-(naphthalene-1-yl-phenyl-amino)-phenyl]-pyrazine-2,3-dicarbonitrile Chew, Siewling; Wang, Pengfei; Hong, Zirou; Kwong, Hoi Lun; Tang, Jianxin; Sun, Shiling; Lee, Chun Sing; Lee, Shui-Tong  
 AUTHOR(S):  
 CORPORATE SOURCE: Center of Super-Diamond and Advanced Films (COSDAF) and Department of Physics and Materials Science, City University of Hong Kong, Hong Kong SAR, Peop. Rep. China  
 SOURCE: Journal of Luminescence (2007), 124(2), 221-227  
 CODEN: JLUMAS; ISSN: 0022-2313  
 PUBLISHER: Elsevier B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 146:251438  
 AB A new compound with intramol. charge transfer (ICT) property-5,6-Bis-[4-(naphthalene-1-yl-phenyl-amino)-phenyl]-pyrazine-2,3-dicarbonitrile (BNPPDC) was synthesized. The new compound was strongly fluorescent in non-polar and moderately polar solvents, as well as in thin solid film. The absorption and emission maxima shifted to longer wavelength with increasing solvent polarity. The fluorescence quantum yield also increased with increasing solvent polarity from non-polar to moderately polar solvents, then decreased with further increase of solvent polarity. This indicates both "pos." and "neg." solvatochromatic effects co-existed. Using this material as hole-transporting emitter and host emitter, we fabricated two electroluminescent (EL) devices with structures of A (ITO)/BNPPDC (45 nm)/1,3,5-tris(N-phenylbenzimidazol-2-yl)benzene (TPBI) (45 nm)/Mg:Ag (200 nm) and B (ITO)/N,N'-diphenyl-N,N'-bis-(3-methylphenyl) (1,1'-diphenyl)4,4'-diamine (TPD) (50 nm)/BNPPDC (20 nm)/1,3,5-tris(N-phenylbenzimidazol-2-yl)benzene (TPBI) (45 nm)/Mg:Ag (200 nm). The devices showed green-yellow EL emission with good efficiency and high brightness. For example, the device A exhibited a high brightness of 17400 cd/m<sup>2</sup> at a driving voltage of 11 V and a very low turn-on voltage (2.9 V), as well as a maximum luminous efficiency 3.61 cd/A. The device B showed a similar performance with a high brightness of 12650 cd/m<sup>2</sup> at a driving voltage of 13 V and a maximum luminous efficiency 3.62 cd/A. In addition, the EL devices using BNPPDC as a host and 4-(dicyanomethylene)-2-tert-butyl-6-(1,1,7,7-tetramethyljulolidyl-9-enyl)-4H-pyran (DCJTb) as a dopant (configuration: ITO/TPD (60 nm)/BNPPDC:DCJTb (2%) (30 nm)/TPBI (35 nm)/Mg:Ag (200 nm)) showed a good performance with a brightness of 150 cd/m<sup>2</sup> at 4.5 V, a maximum brightness of 12600 cd/m<sup>2</sup> at 11.5 V, and a maximum luminous efficiency of 3.30 cd/A.  
 IT 898546-75-3P  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (photoluminescence and electroluminescence of novel green-yellow emitting material-5,6-Bis-[4-(naphthalene-1-yl-phenyl-amino)-phenyl]-pyrazine-2,3-dicarbonitrile)  
 RN 898546-75-3 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1-naphthalenylphenylamino)phenyl]- (CA INDEX NAME)



IT 101579-12-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (starting material; photoluminescence and electroluminescence of novel  
 green-yellow emitting material-5,6-Bis-[4-(naphthalene-1-yl-phenyl-  
 amino)]-pyrazine-2,3-dicarbonitrile)  
 RN 101579-12-8 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)

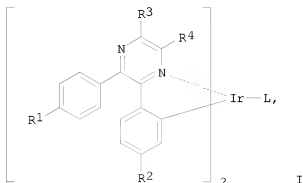


REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 22 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:1228232 CAPLUS  
 DOCUMENT NUMBER: 146:16044  
 TITLE: Light emitting device and electronic appliance using  
 the same  
 INVENTOR(S): Ohsawa, Nobuharu; Inoue, Hideko; Seo, Satoshi;  
 Shitagaki, Satoko  
 PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan  
 SOURCE: U.S. Pat. Appl. Publ., 49pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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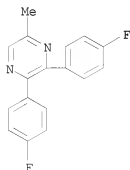
US 2006263636	A1	20061123	US 2006-431648	20060509
JP 2006352102	A	20061228	JP 2006-138952	20060518
CN 1866576	A	20061122	CN 2006-10084751	20060519
PRIORITY APPLN. INFO.:			JP 2005-148777	A 20050520
OTHER SOURCE(S):	MARPAT 146:16044			
GI				



AB A light emitting device is described comprising a light emitting layer between a first electrode and a second electrode; a hole transporting layer between the first electrode and the light emitting layer wherein the hole transporting layer contacts with the light emitting layer; an electron transporting layer between the second electrode and the light emitting layer wherein the electron transporting layer contacts with the light emitting layer; and a mixed layer between the electron transporting layer and the second electrode wherein the mixed layer includes an electron transporting substance and a substance showing an electron donating property with respect to the electron transporting substance, wherein the light emitting layer includes an organometallic complex represented by the general formula I and a host, wherein R1 and R2 each represent an electron-withdrawing group, R3 and R4 each represent any one of hydrogen or an alkyl group having 1 to 4 carbon atoms, L represents a monoanionic ligand.

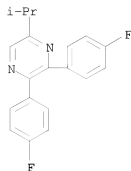
IT 199783-12-5P 909568-11-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (light emitting device using organometallic complex and electronic appliance using same)

RN 199783-12-5 CAPLUS  
 CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-methyl- (CA INDEX NAME)





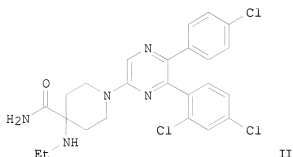
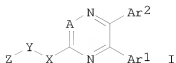
RN 909568-11-2 CAPLUS  
 CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-(1-methylethyl)- (CA INDEX NAME)



L14 ANSWER 23 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:1124114 CAPLUS  
 DOCUMENT NUMBER: 145:455030  
 TITLE: Preparation of substituted heteroaryl CB1 antagonists  
 INVENTOR(S): Yuan, Jun; Guo, Qin; Zhao, He; Hu, Shaojing;  
 Whitehouse, Darren; Fringle, Wallace; Mao, Jianmin;  
 Maynard, George; Hammer, Jack; Wustrow, David; Li,  
 Hongbin  
 PATENT ASSIGNEE(S): Neurogen Corporation, USA  
 SOURCE: PCT Int. Appl., 447pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006113704	A2	20061026	WO 2006-US14548	20060418
WO 2006113704	A3	20070208		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
US 2007078135	A1	20070405	US 2006-406532	20060418
PRIORITY APPLN. INFO.:			US 2005-672452P	P 20050418
OTHER SOURCE(S):	MARPAT 145:455030			

GI



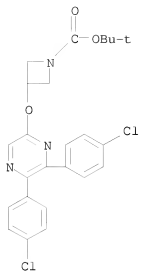
AB The title compds. I [A = CR1 or N; Ar1, Ar2 = (un)substituted 5-10 membered carbocycle and heterocycle; X = (un)substituted CH2, O, NH or SOMNH; m = 0-2; Y = (un)substituted alkylene; Z = (un)substituted OH, NH2, SOMNH2, etc.; R1 = H, halo, CN, etc.] which may be used to modulate CB1 activity in vivo or in vitro, and are particularly useful in the treatment of conditions responsive to CB1 modulation in humans, domesticated companion animals and livestock animals, including appetite disorders, obesity and addictive disorders, were prepared E.g., a multi-step synthesis of II, starting from 2,6-dichloropyrazine and 4-(ethylamino)piperidine-4-carboxamide, was given. Exemplified compds. I were tested at CB1 receptor. Thus, II as many other representative compds. I showed IC50 of 2  $\mu$ M or less. Pharmaceutical compns. and methods for using compds. I to treat disorders responsive to CB1 modulation are provided, as are methods for using such ligands for receptor localization studies and various in vitro assays.

IT 913270-53-8P 913270-71-0P 913282-57-2P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(preparation of substituted heteroaryl compds. useful in treatment of diseases responsive to CB1 activation)

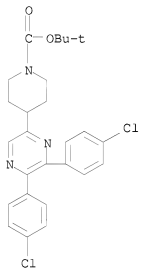
RN 913270-53-8 CAPLUS

CN 1-Azetidinecarboxylic acid, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



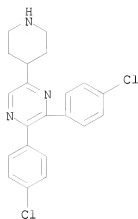
RN 913270-71-0 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[5,6-bis(4-chlorophenyl)pyrazinyl]-,  
1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 913282-57-2 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-(4-piperidinyl)- (CA INDEX NAME)



IT 913269-77-9P 913269-78-0P 913269-81-5P  
 913269-82-6P 913269-90-6P 913269-91-7P  
 913269-92-8P 913269-93-9P 913269-94-0P  
 913269-96-2P 913270-07-2P 913270-08-3P  
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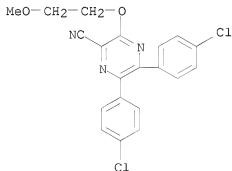
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RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU  
 (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
 (Uses)

(preparation of substituted heteroaryl compds. useful in treatment of  
 diseases responsive to CB1 activation)

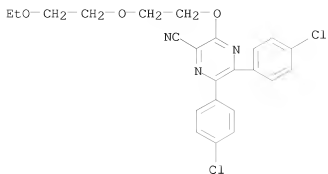
RN 913269-77-9 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-(2-methoxyethoxy)- (9CI)  
 (CA INDEX NAME)



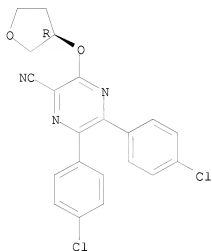
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CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(2-ethoxyethoxy)ethoxy]-  
 (9CI) (CA INDEX NAME)

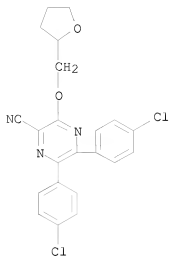


RN 913269-81-5 CAPLUS  
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[[ (3R)-tetrahydro-3-furanyloxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

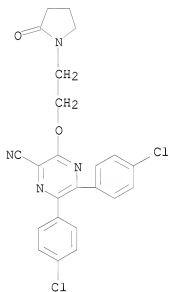


RN 913269-82-6 CAPLUS  
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[(tetrahydro-2-furanyl)methoxy]- (9CI) (CA INDEX NAME)



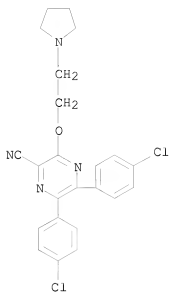
RN 913269-90-6 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(2-oxo-1-pyrrolidinyl)ethoxy]- (9CI) (CA INDEX NAME)



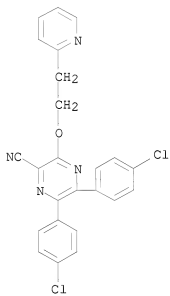
RN 913269-91-7 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(1-pyrrolidinyl)ethoxy]- (9CI) (CA INDEX NAME)



RN 913269-92-8 CAPLUS

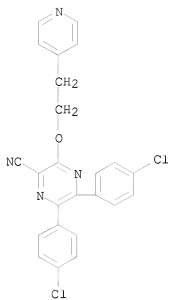
CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(2-pyridinyl)ethoxy]-  
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RN 913269-93-9 CAPLUS

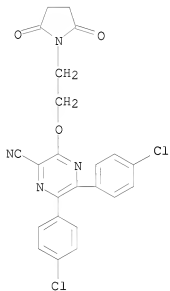
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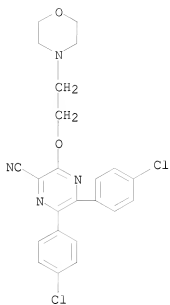
RN 913269-94-0 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(2,5-dioxo-1-pyrrolidinyl)ethoxy]- (9CI) (CA INDEX NAME)



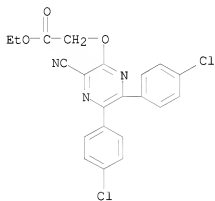
RN 913269-96-2 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(4-morpholinyl)ethoxy]- (9CI) (CA INDEX NAME)



RN 913270-07-2 CAPLUS

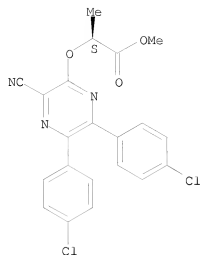
CN Acetic acid, [[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, ethyl ester  
(9CI) (CA INDEX NAME)



RN 913270-08-3 CAPLUS

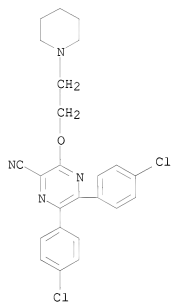
CN Propanoic acid, 2-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, methyl  
ester, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



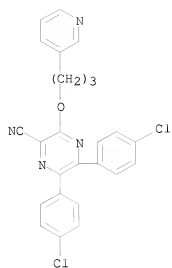
RN 913270-15-2 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(1-piperidinyl)ethoxy]-(9CI) (CA INDEX NAME)

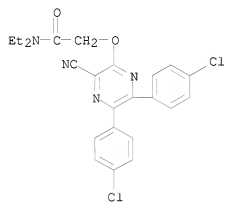


RN 913270-16-3 CAPLUS

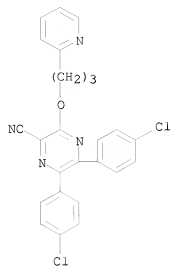
CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[3-(3-pyridinyl)propoxy]-(9CI) (CA INDEX NAME)



RN 913270-19-6 CAPLUS  
 CN Acetamide, 2-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-N,N-diethyl-  
 (9CI) (CA INDEX NAME)

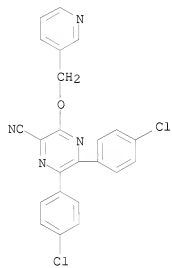


RN 913270-21-0 CAPLUS  
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 (9CI) (CA INDEX NAME)



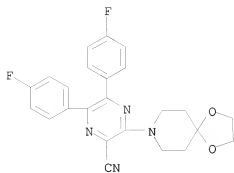
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CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-(3-pyridinylmethoxy)-  
(9CI) (CA INDEX NAME)



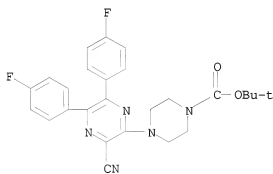
RN 913270-24-3 CAPLUS

CN Pyrazinecarbonitrile, 3-(1,4-dioxo-8-azaspiro[4.5]dec-8-yl)-5,6-bis(4-  
fluorophenyl)- (9CI) (CA INDEX NAME)



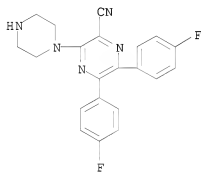
RN 913270-27-6 CAPLUS

CN 1-Piperazinecarboxylic acid, 4-[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



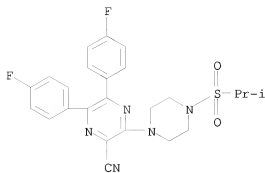
RN 913270-28-7 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-(1-piperazinyl)- (9CI) (CA INDEX NAME)



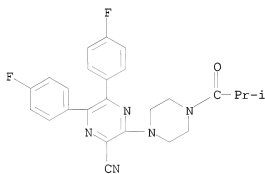
RN 913270-29-8 CAPLUS

CN Piperazine, 1-[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]-4-[(1-methylethyl)sulfonyl]- (9CI) (CA INDEX NAME)



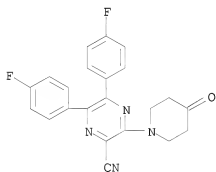
RN 913270-30-1 CAPLUS

CN Piperazine, 1-[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]-4-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



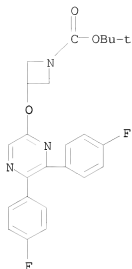
RN 913270-31-2 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-(4-oxo-1-piperidinyl)- (9CI) (CA INDEX NAME)



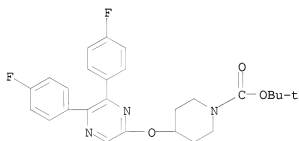
RN 913270-32-3 CAPLUS

CN 1-Azetidinecarboxylic acid, 3-[[5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



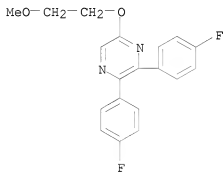
RN 913270-33-4 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[[5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 913270-34-5 CAPLUS

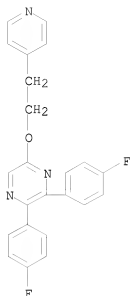
CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-(2-methoxyethoxy)- (CA INDEX NAME)



RN 913270-35-6 CAPLUS

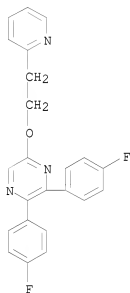
CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[2-(4-pyridinyl)ethoxy]- (CA INDEX NAME)





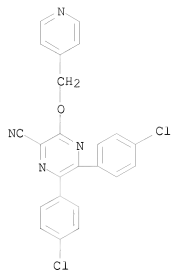
RN 913270-36-7 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[2-(2-pyridinyl)ethoxy]- (CA INDEX NAME)



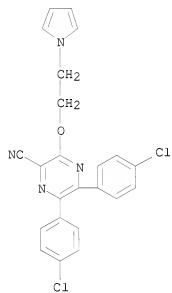
RN 913270-37-8 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-(4-pyridinylmethoxy)- (9CI) (CA INDEX NAME)



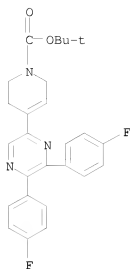
RN 913270-38-9 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(1H-pyrrol-1-yl)ethoxy]-  
(9CI) (CA INDEX NAME)

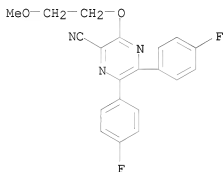


RN 913270-39-0 CAPLUS

CN 1(2H)-Pyridinecarboxylic acid, 4-[5,6-bis(4-fluorophenyl)pyrazinyl]-3,6-  
dihydro-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

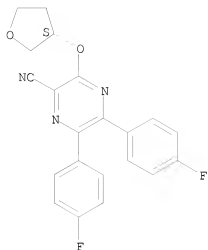


RN 913270-49-2 CAPLUS  
 CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-(2-methoxyethoxy)- (9CI)  
 (CA INDEX NAME)



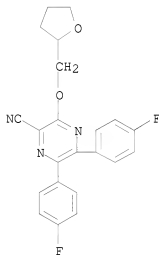
RN 913270-50-5 CAPLUS  
 CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[[3-(3S)-tetrahydro-3-furanyloxy]methyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



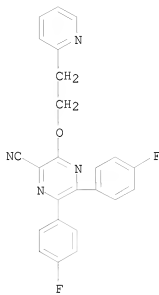
RN 913270-51-6 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[(tetrahydro-2-furanyl)methoxy]- (9CI) (CA INDEX NAME)



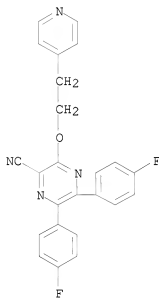
RN 913270-52-7 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[2-(2-pyridinyl)ethoxy]- (9CI) (CA INDEX NAME)



RN 913270-54-9 CAPLUS

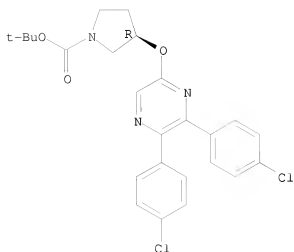
CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[2-(4-pyridinyl)ethoxy]-  
(9CI) (CA INDEX NAME)



RN 913270-55-0 CAPLUS

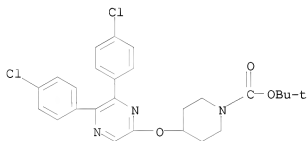
CN 1-Pyrrrolidinecarboxylic acid, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-,  
1,1-dimethylethyl ester, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



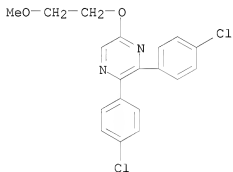
RN 913270-56-1 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



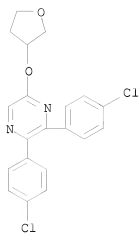
RN 913270-57-2 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-(2-methoxyethoxy)- (CA INDEX NAME)



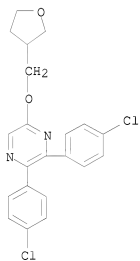
RN 913270-58-3 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(tetrahydro-3-furanyl)oxy]- (CA INDEX NAME)



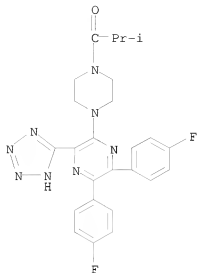
RN 913270-59-4 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(tetrahydro-3-furanyl)methoxy]- (CA INDEX NAME)



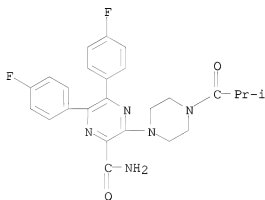
RN 913270-61-8 CAPLUS

CN Piperazine, 1-[5,6-bis(4-fluorophenyl)-3-(1H-tetrazol-5-yl)pyrazinyl]-4-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



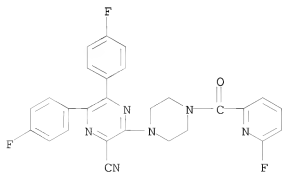
RN 913270-62-9 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-fluorophenyl)-3-[4-(2-methyl-1-oxopropyl)-1-piperazinyl]- (9CI) (CA INDEX NAME)



RN 913270-65-2 CAPLUS

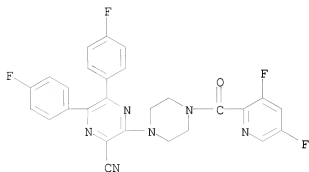
CN Piperazine, 1-[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]-4-[(6-fluoro-2-pyridinyl)carbonyl]- (9CI) (CA INDEX NAME)





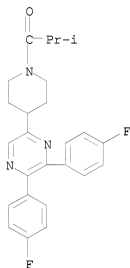
RN 913270-66-3 CAPLUS

CN Piperazine, 1-[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]-4-[(3,5-difluoro-2-pyridinyl)carbonyl]- (9CI) (CA INDEX NAME)



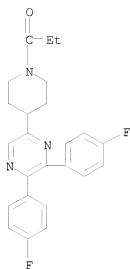
RN 913270-72-1 CAPLUS

CN Piperidine, 4-[5,6-bis(4-fluorophenyl)pyrazinyl]-1-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



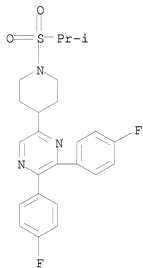
RN 913270-73-2 CAPLUS

CN Piperidine, 4-[5,6-bis(4-fluorophenyl)pyrazinyl]-1-(1-oxopropyl)- (9CI) (CA INDEX NAME)



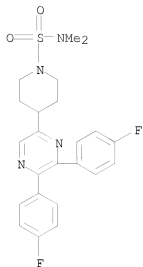
RN 913270-74-3 CAPLUS

CN Piperidine, 4-[5,6-bis(4-fluorophenyl)pyrazinyl]-1-[(1-methylethyl)sulfonyl]- (9CI) (CA INDEX NAME)

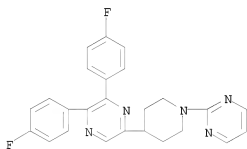


RN 913270-75-4 CAPLUS

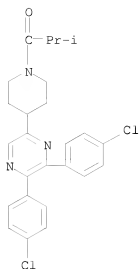
CN 1-Piperidinesulfonamide, 4-[5,6-bis(4-fluorophenyl)pyrazinyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



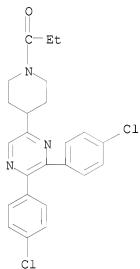
RN 913270-76-5 CAPLUS  
 CN Pyrimidine, 2-[4-[5,6-bis(4-fluorophenyl)pyrazinyl]-1-piperidinyl]- (9CI)  
 (CA INDEX NAME)



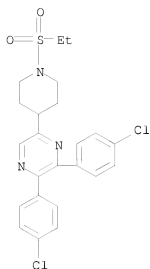
RN 913270-77-6 CAPLUS  
 CN Piperidine, 4-[5,6-bis(4-chlorophenyl)pyrazinyl]-1-(2-methyl-1-oxopropyl)-  
 (9CI) (CA INDEX NAME)



RN 913270-78-7 CAPLUS  
 CN Piperidine, 4-[5,6-bis(4-chlorophenyl)pyrazinyl]-1-(1-oxopropyl)- (9CI)  
 (CA INDEX NAME)

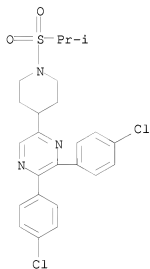


RN 913270-79-8 CAPLUS  
 CN Piperidine, 4-[5,6-bis(4-chlorophenyl)pyrazinyl]-1-(ethylsulfonyl)- (9CI)  
 (CA INDEX NAME)



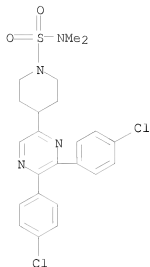
RN 913270-81-2 CAPLUS

CN Piperidine, 4-[5,6-bis(4-chlorophenyl)pyrazinyl]-1-[(1-methylethyl)sulfonyl]- (9CI) (CA INDEX NAME)

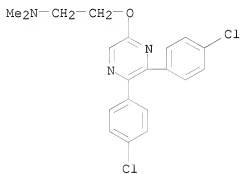


RN 913270-83-4 CAPLUS

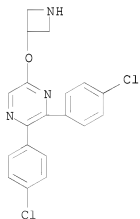
CN 1-Piperidinesulfonamide, 4-[5,6-bis(4-chlorophenyl)pyrazinyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 913270-86-7 CAPLUS  
 CN Ethanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N,N-dimethyl- (9CI)  
 (CA INDEX NAME)



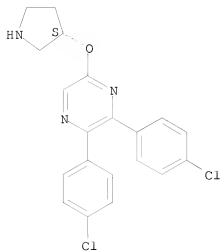
RN 913270-87-8 CAPLUS  
 CN Pyrazine, 5-(3-azetidinyloxy)-2,3-bis(4-chlorophenyl)- (CA INDEX NAME)



RN 913270-89-0 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(3S)-3-pyrrolidinyloxy]- (CA INDEX NAME)

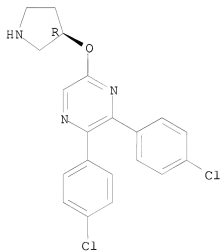
Absolute stereochemistry.



RN 913270-90-3 CAPLUS

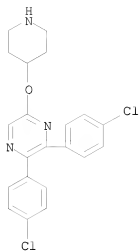
CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(3R)-3-pyrrolidinyloxy]- (CA INDEX NAME)

Absolute stereochemistry.



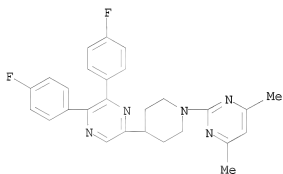
RN 913270-91-4 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-(4-piperidinyloxy)- (CA INDEX NAME)



RN 913270-92-5 CAPLUS

CN Pyrimidine, 2-[4-[[5,6-bis(4-fluorophenyl)pyrazinyl]-1-piperidinyl]-4,6-dimethyl- (9CI) (CA INDEX NAME)

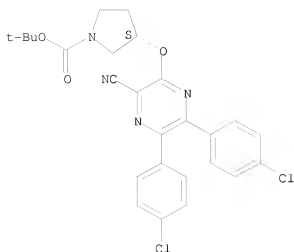


RN 913272-51-2 CAPLUS

CN 1-Pyrrolidinecarboxylic acid, 3-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, 1,1-dimethylethyl ester, (3S)- (9CI) (CA INDEX NAME)

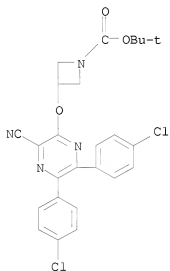
Absolute stereochemistry.





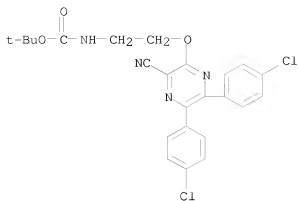
RN 913272-53-4 CAPLUS

CN 1-Azetidinecarboxylic acid, 3-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



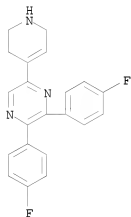
RN 913272-54-5 CAPLUS

CN Carbamic acid, [2-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]ethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



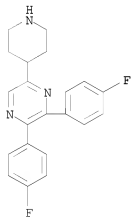
RN 913272-55-6 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-(1,2,3,6-tetrahydro-4-pyridinyl)- (CA INDEX NAME)



RN 913272-56-7 CAPLUS

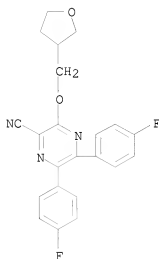
CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-(4-piperidinyl)- (CA INDEX NAME)



RN 913272-58-9 CAPLUS

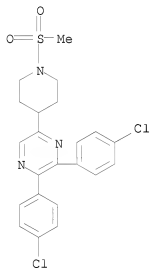
CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[(tetrahydro-3-

furanyl)methoxy]- (9CI) (CA INDEX NAME)



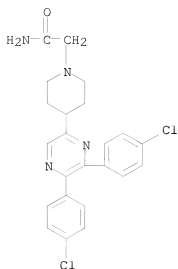
RN 913272-70-5 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[1-(methylsulfonyl)-4-piperidinyl]-  
(CA INDEX NAME)

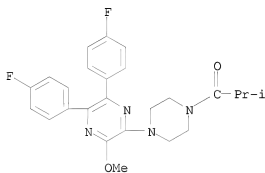


RN 913272-71-6 CAPLUS

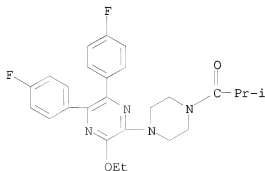
CN 1-Piperidineacetamide, 4-[5,6-bis(4-chlorophenyl)pyrazinyl]- (9CI) (CA  
INDEX NAME)



RN 913272-77-2 CAPLUS  
 CN Piperazine, 1-[5,6-bis(4-fluorophenyl)-3-methoxypyrazinyl]-4-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)

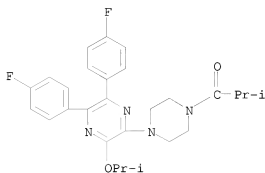


RN 913272-78-3 CAPLUS  
 CN Piperazine, 1-[3-ethoxy-5,6-bis(4-fluorophenyl)pyrazinyl]-4-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



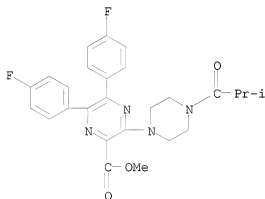
RN 913272-79-4 CAPLUS  
 CN Piperazine, 1-[5,6-bis(4-fluorophenyl)-3-(1-methylethoxy)pyrazinyl]-4-(2-

methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



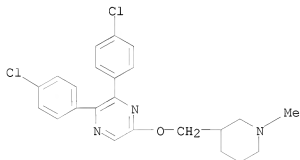
RN 913272-80-7 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-fluorophenyl)-3-[4-(2-methyl-1-oxopropyl)-1-piperazinyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 913272-82-9 CAPLUS

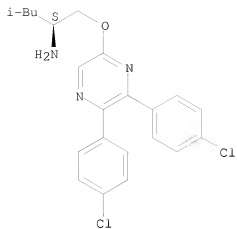
CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(1-methyl-3-piperidinyl)methoxy]- (CA INDEX NAME)



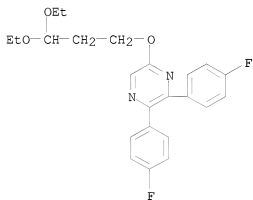
RN 913272-83-0 CAPLUS

CN 2-Pentanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-4-methyl-, (2S)- (9CI) (CA INDEX NAME)

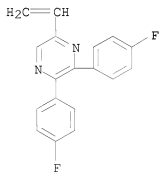
Absolute stereochemistry.



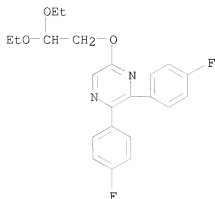
RN 913272-93-2 CAPLUS  
 CN Pyrazine, 5-(3,3-diethoxypropoxy)-2,3-bis(4-fluorophenyl)- (CA INDEX NAME)



RN 913272-94-3 CAPLUS  
 CN Pyrazine, 5-ethenyl-2,3-bis(4-fluorophenyl)- (CA INDEX NAME)

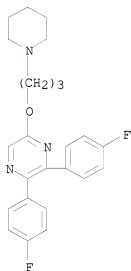


RN 913272-95-4 CAPLUS  
 CN Pyrazine, 5-(2,2-diethoxyethoxy)-2,3-bis(4-fluorophenyl)- (CA INDEX NAME)



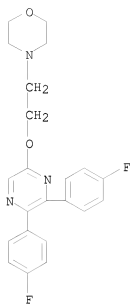
RN 913272-96-5 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[3-(1-piperidinyl)propoxy]- (CA INDEX NAME)

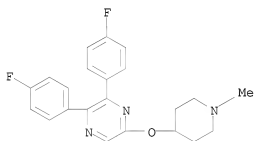


RN 913272-97-6 CAPLUS

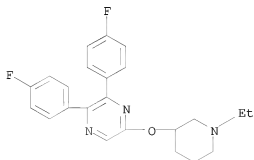
CN Morpholine, 4-[2-[[5,6-bis(4-fluorophenyl)pyrazinyl]oxy]ethyl]- (9CI) (CA INDEX NAME)



RN 913272-98-7 CAPLUS  
 CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[(1-methyl-4-piperidinyl)oxy]- (CA INDEX NAME)

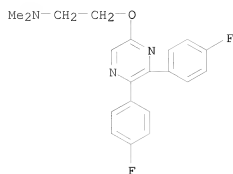


RN 913272-99-8 CAPLUS  
 CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[(1-ethyl-3-piperidinyl)oxy]- (CA INDEX NAME)

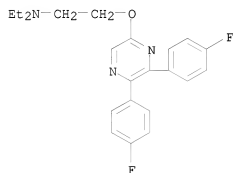


RN 913273-00-4 CAPLUS  
 CN Ethanamine, 2-[[5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-N,N-dimethyl- (9CI) (CA INDEX NAME)

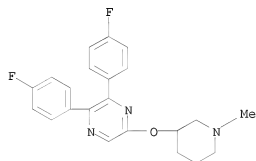




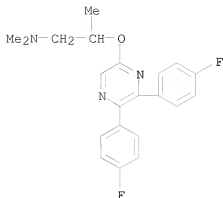
RN 913273-01-5 CAPLUS  
 CN Ethanamine, 2-[[5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-N,N-diethyl- (9CI)  
 (CA INDEX NAME)



RN 913273-02-6 CAPLUS  
 CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[(1-methyl-3-piperidinyl)oxy]- (CA  
 INDEX NAME)

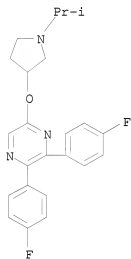


RN 913273-03-7 CAPLUS  
 CN 1-Propanamine, 2-[[5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-N,N-dimethyl-  
 (9CI) (CA INDEX NAME)



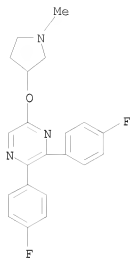
RN 913273-04-8 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[[1-(1-methylethyl)-3-pyrrolidinyl]oxy]- (CA INDEX NAME)



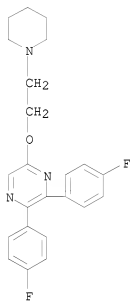
RN 913273-05-9 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[(1-methyl-3-pyrrolidinyl)oxy]- (CA INDEX NAME)



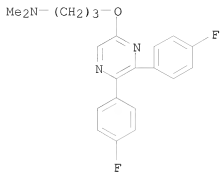
RN 913273-06-0 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[2-(1-piperidinyl)ethoxy]- (CA INDEX NAME)



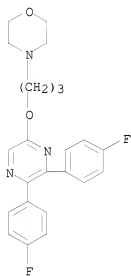
RN 913273-07-1 CAPLUS

CN 1-Propanamine, 3-[[5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 913273-08-2 CAPLUS

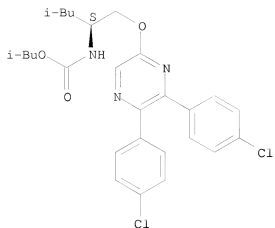
CN Morpholine, 4-[3-[[5,6-bis(4-fluorophenyl)pyrazinyl]oxy]propyl]- (9CI)  
(CA INDEX NAME)



RN 913273-11-7 CAPLUS

CN Carbamic acid, [(1S)-1-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]-3-methylbutyl]-, 2-methylpropyl ester (9CI) (CA INDEX NAME)

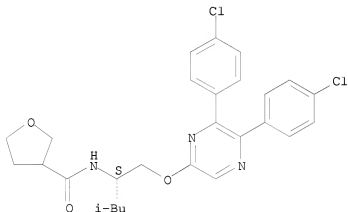
Absolute stereochemistry.



RN 913273-12-8 CAPLUS

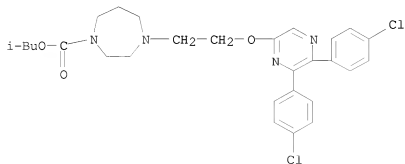
CN 3-Furancarboxamide, N-[(1S)-1-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]-3-methylbutyl]tetrahydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



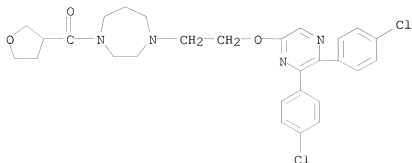
RN 913273-13-9 CAPLUS

CN 1H-1,4-Diazepine-1-carboxylic acid, 4-[2-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]hexahydro-, 2-methylpropyl ester (9CI) (CA INDEX NAME)



RN 913273-14-0 CAPLUS

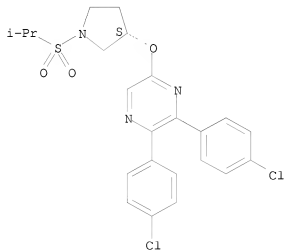
CN 1H-1,4-Diazepine, 1-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]hexahydro-4-[(tetrahydro-3-furanyl)carbonyl]- (9CI) (CA INDEX NAME)



RN 913273-15-1 CAPLUS

CN Pyrrolidine, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1-[(1-methylethyl)sulfonyl]-, (3S)- (9CI) (CA INDEX NAME)

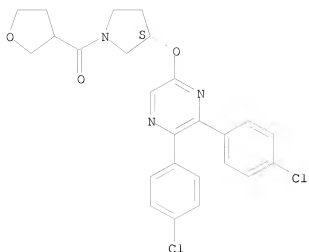
Absolute stereochemistry.



RN 913273-16-2 CAPLUS

CN Pyrrolidine, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1-[(tetrahydro-3-furanyl)carbonyl]-, (3S)- (9CI) (CA INDEX NAME)

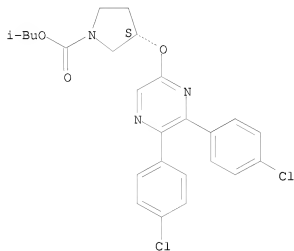
Absolute stereochemistry.



RN 913273-18-4 CAPLUS

CN 1-Pyrrolidinecarboxylic acid, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, 2-methylpropyl ester, (3S)- (9CI) (CA INDEX NAME)

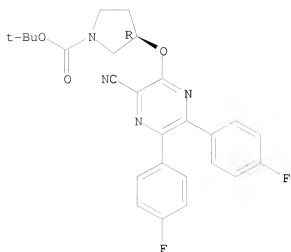
Absolute stereochemistry.



RN 913273-24-2 CAPLUS

CN 1-Pyrrolidinecarboxylic acid, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester, (3R)- (9CI) (CA INDEX NAME)

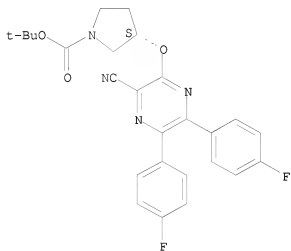
Absolute stereochemistry.



RN 913273-25-3 CAPLUS

CN 1-Pyrrolidinecarboxylic acid, 3-[[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester, (3S)- (9CI) (CA INDEX NAME)

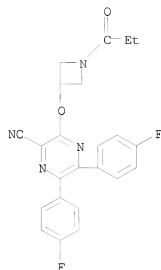
Absolute stereochemistry.



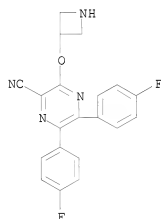
RN 913273-26-4 CAPLUS

CN Azetidine, 3-[[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(1-oxopropyl)- (9CI) (CA INDEX NAME)

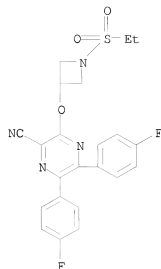




RN 913273-27-5 CAPLUS  
 CN Pyrazinecarbonitrile, 3-(3-azetidinyloxy)-5,6-bis(4-fluorophenyl)- (9CI)  
 (CA INDEX NAME)

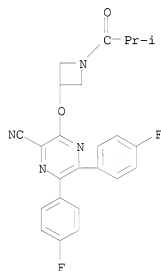


RN 913273-28-6 CAPLUS  
 CN Azetidine, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(ethylsulfonyl)- (9CI) (CA INDEX NAME)



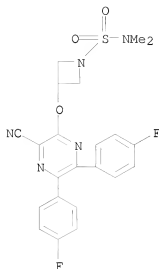
RN 913273-29-7 CAPLUS

CN Azetidine, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



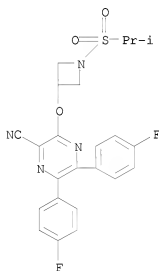
RN 913273-30-0 CAPLUS

CN 1-Azetidinesulfonamide, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-N,N-dimethyl- (9CI) (CA INDEX NAME)



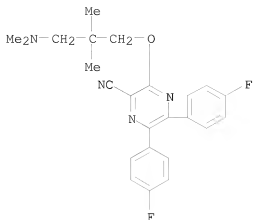
RN 913273-31-1 CAPLUS

CN Azetidine, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-[(1-methylethyl)sulfonyl]- (9CI) (CA INDEX NAME)



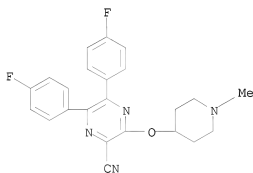
RN 913273-32-2 CAPLUS

CN Pyrazinecarbonitrile, 3-[3-(dimethylamino)-2,2-dimethylpropoxy]-5,6-bis(4-fluorophenyl)- (9CI) (CA INDEX NAME)



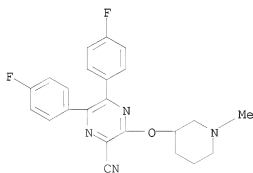
RN 913273-33-3 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[(1-methyl-4-piperidinyl)oxy]- (9CI) (CA INDEX NAME)



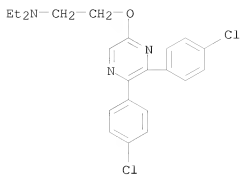
RN 913273-34-4 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[(1-methyl-3-piperidinyl)oxy]- (9CI) (CA INDEX NAME)

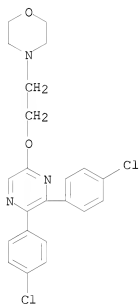


RN 913273-35-5 CAPLUS

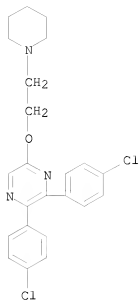
CN Ethanamine, 2-[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N,N-diethyl- (9CI) (CA INDEX NAME)



RN 913273-36-6 CAPLUS  
 CN Morpholine, 4-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]- (9CI) (CA INDEX NAME)

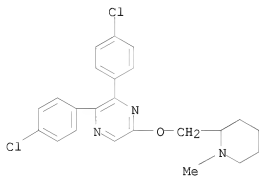


RN 913273-37-7 CAPLUS  
 CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[2-(1-piperidinyl)ethoxy]- (CA INDEX NAME)



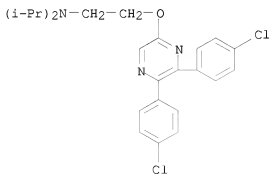
RN 913273-38-8 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(1-methyl-2-piperidinyl)methoxy]-  
(CA INDEX NAME)



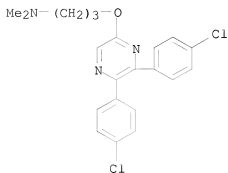
RN 913273-39-9 CAPLUS

CN 2-Propanamine, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]-N-(1-methylethyl)- (9CI) (CA INDEX NAME)



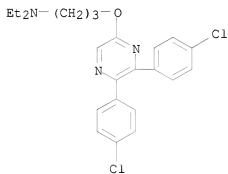
RN 913273-40-2 CAPLUS

CN 1-Propanamine, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N,N-dimethyl-  
(9CI) (CA INDEX NAME)



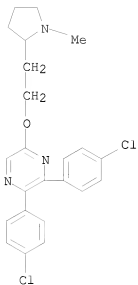
RN 913273-41-3 CAPLUS

CN 1-Propanamine, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N,N-diethyl-  
(9CI) (CA INDEX NAME)



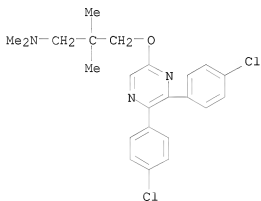
RN 913273-42-4 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[2-(1-methyl-2-pyrrolidinyl)ethoxy]-  
(CA INDEX NAME)



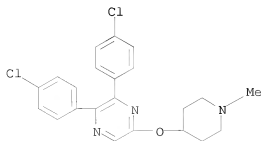
RN 913273-43-5 CAPLUS

CN 1-Propanamine, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N,N,2,2-tetramethyl- (9CI) (CA INDEX NAME)



RN 913273-44-6 CAPLUS

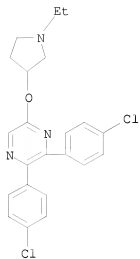
CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(1-methyl-4-piperidinyl)oxy]- (CA INDEX NAME)



RN 913273-45-7 CAPLUS

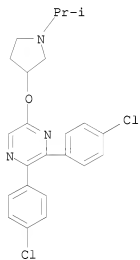


CN    Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(1-ethyl-3-pyrrolidinyl)oxy]-    (CA INDEX NAME)



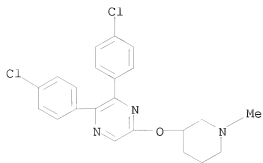
RN    913273-46-8    CAPLUS

CN    Pyrazine, 2,3-bis(4-chlorophenyl)-5-[[1-(1-methylethyl)-3-pyrrolidinyl]oxy]-    (CA INDEX NAME)

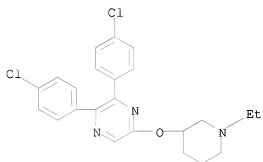


RN    913273-47-9    CAPLUS

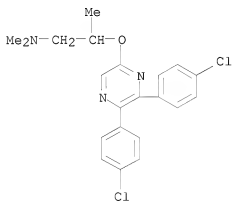
CN    Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(1-methyl-3-piperidinyl)oxy]-    (CA INDEX NAME)



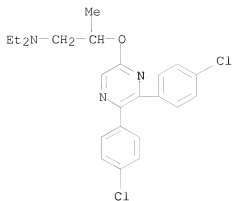
RN 913273-48-0 CAPLUS  
 CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(1-ethyl-3-piperidinyl)oxy]- (CA INDEX NAME)



RN 913273-49-1 CAPLUS  
 CN 1-Propanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N,N-dimethyl- (9CI) (CA INDEX NAME)

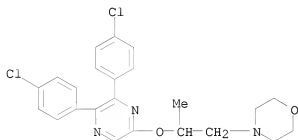


RN 913273-50-4 CAPLUS  
 CN 1-Propanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N,N-diethyl- (9CI) (CA INDEX NAME)



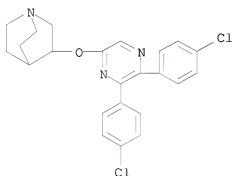
RN 913273-51-5 CAPLUS

CN Morpholine, 4-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]- (9CI)  
(CA INDEX NAME)



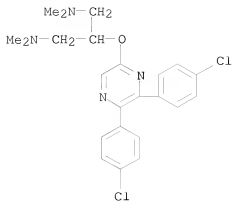
RN 913273-52-6 CAPLUS

CN 1-Azabicyclo[2.2.2]octane, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-  
(9CI) (CA INDEX NAME)



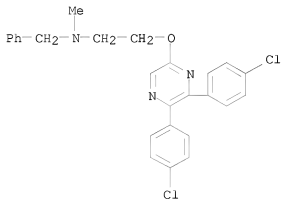
RN 913273-53-7 CAPLUS

CN 1,3-Propanediamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N,N,N',N'-  
tetramethyl- (9CI) (CA INDEX NAME)



RN 913273-54-8 CAPLUS

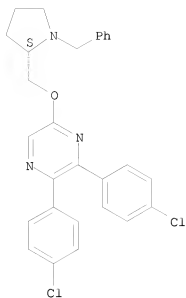
CN Benzenemethanamine, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]-N-methyl- (9CI) (CA INDEX NAME)



RN 913273-55-9 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[[[(2S)-1-(phenylmethyl)-2-pyrrolidinyl]methoxy]- (CA INDEX NAME)

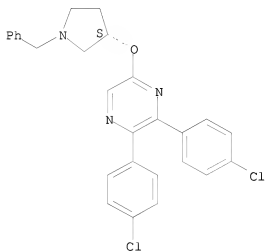
Absolute stereochemistry.



RN 913273-56-0 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[[ (3S)-1-(phenylmethyl)-3-pyrrolidinyl]oxy]- (CA INDEX NAME)

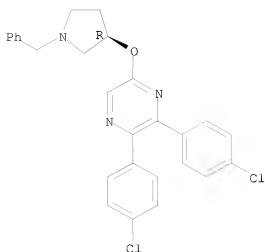
Absolute stereochemistry.



RN 913273-57-1 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[[ (3R)-1-(phenylmethyl)-3-pyrrolidinyl]oxy]- (CA INDEX NAME)

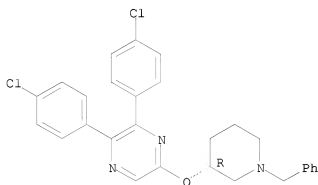
Absolute stereochemistry.



RN 913273-58-2 CAPLUS

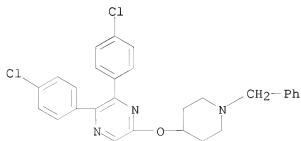
CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[[ (3R)-1-(phenylmethyl)-3-piperidinyl]oxy]- (CA INDEX NAME)

Absolute stereochemistry.



RN 913273-59-3 CAPLUS

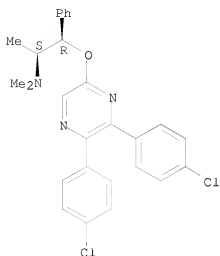
CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[[1-(phenylmethyl)-4-piperidinyl]oxy]- (CA INDEX NAME)



RN 913273-60-6 CAPLUS

CN Benzeneethanamine,  $\beta$ -[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N,N, $\alpha$ -trimethyl-, ( $\alpha$ R, $\beta$ S)-rel- (9CI) (CA INDEX NAME)

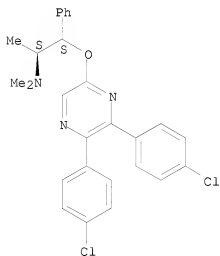
Relative stereochemistry.



RN 913273-61-7 CAPLUS

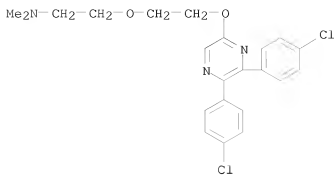
CN Benzeneethanamine,  $\beta$ -[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-  
N,N, $\alpha$ -trimethyl-, ( $\alpha$ R, $\beta$ R)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

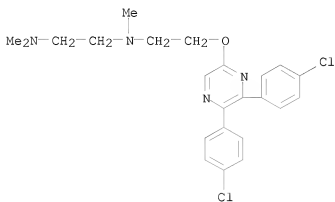


RN 913273-62-8 CAPLUS

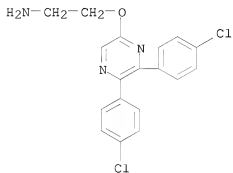
CN Ethanamine, 2-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethoxy]-N,N-  
dimethyl- (9CI) (CA INDEX NAME)



RN 913273-63-9 CAPLUS  
 CN 1,2-Ethanediamine, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]-  
 N,N',N'-trimethyl- (9CI) (CA INDEX NAME)

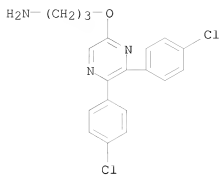


RN 913273-64-0 CAPLUS  
 CN Ethanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]- (9CI) (CA INDEX  
 NAME)



RN 913273-65-1 CAPLUS  
 CN 1-Propanamine, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]- (9CI) (CA INDEX  
 NAME)

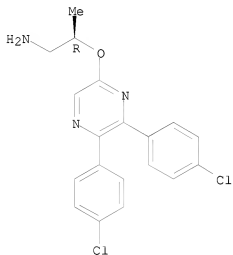




RN 913273-66-2 CAPLUS

CN 1-Propanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, (2R)- (9CI)  
(CA INDEX NAME)

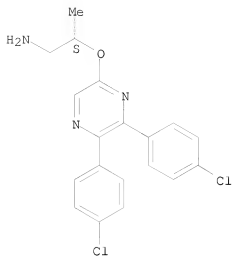
Absolute stereochemistry.



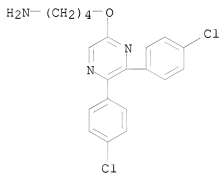
RN 913273-67-3 CAPLUS

CN 1-Propanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, (2S)- (9CI)  
(CA INDEX NAME)

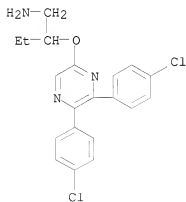
Absolute stereochemistry.



RN 913273-68-4 CAPLUS  
 CN 1-Butanamine, 4-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]- (9CI) (CA INDEX NAME)

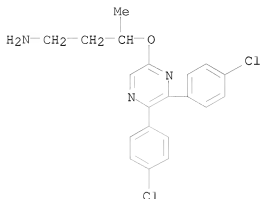


RN 913273-69-5 CAPLUS  
 CN 1-Butanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]- (9CI) (CA INDEX NAME)



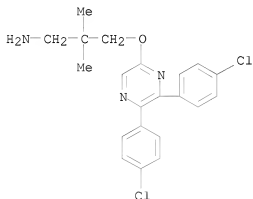
RN 913273-70-8 CAPLUS

CN 1-Butanamine, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]- (9CI) (CA INDEX NAME)



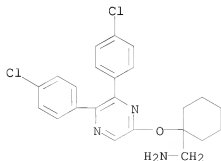
RN 913273-71-9 CAPLUS

CN 1-Propanamine, 3-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-2,2-dimethyl- (9CI) (CA INDEX NAME)



RN 913273-72-0 CAPLUS

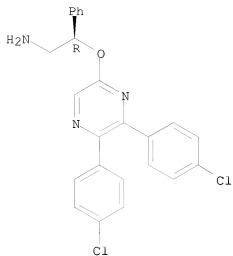
CN Cyclohexanemethanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]- (9CI) (CA INDEX NAME)



RN 913273-73-1 CAPLUS

CN Benzeneethanamine, β-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, (βR)- (9CI) (CA INDEX NAME)

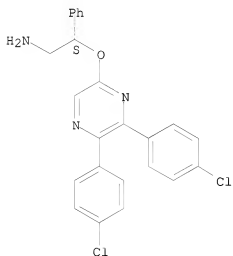
Absolute stereochemistry.



RN 913273-74-2 CAPLUS

CN Benzeneethanamine,  $\beta$ -[[5,6-bis(4-chlorophenyl)pyrazin-2-yl]oxy]-,  
(R)- (9CI) (CA INDEX NAME)

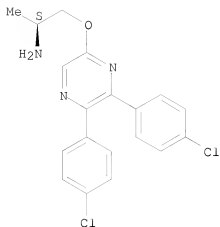
Absolute stereochemistry.



RN 913273-75-3 CAPLUS

CN 2-Propanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazin-2-yl]oxy]-, (S)- (9CI)  
(CA INDEX NAME)

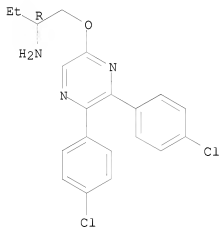
Absolute stereochemistry.



RN 913273-76-4 CAPLUS

CN 2-Butanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, (2R)- (9CI) (CA INDEX NAME)

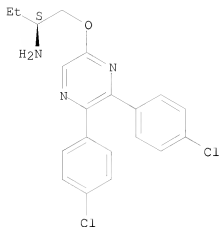
Absolute stereochemistry.



RN 913273-77-5 CAPLUS

CN 2-Butanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, (2S)- (9CI) (CA INDEX NAME)

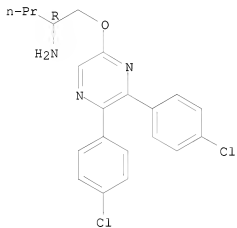
Absolute stereochemistry.



RN 913273-78-6 CAPLUS

CN 2-Pentanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, (2R)- (9CI)  
(CA INDEX NAME)

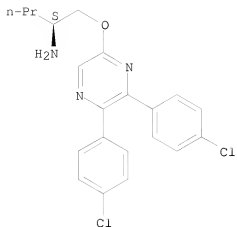
Absolute stereochemistry.



RN 913273-79-7 CAPLUS

CN 2-Pentanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, (2S)- (9CI)  
(CA INDEX NAME)

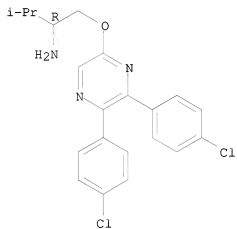
Absolute stereochemistry.



RN 913273-80-0 CAPLUS

CN 2-Butanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-3-methyl-, (2R)-  
(9CI) (CA INDEX NAME)

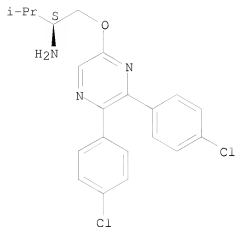
Absolute stereochemistry.



RN 913273-81-1 CAPLUS

CN 2-Butanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-3-methyl-, (2S)-  
(9CI) (CA INDEX NAME)

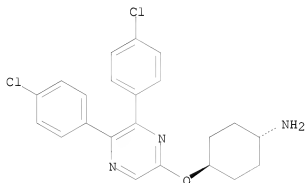
Absolute stereochemistry.



RN 913273-82-2 CAPLUS

CN Cyclohexanamine, 4-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, trans- (9CI)  
(CA INDEX NAME)

Relative stereochemistry.

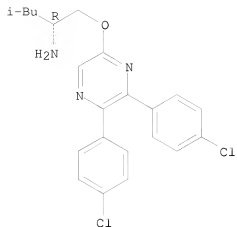


RN 913273-83-3 CAPLUS

CN 2-Pentanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-4-methyl-, (2R)-  
(9CI) (CA INDEX NAME)

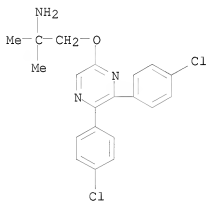
Absolute stereochemistry.





RN 913273-84-4 CAPLUS

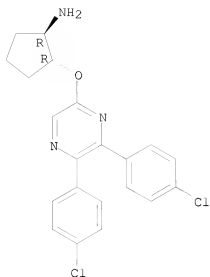
CN 2-Propanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-2-methyl- (9CI)  
(CA INDEX NAME)



RN 913273-85-5 CAPLUS

CN Cyclopentanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, (1R,2R)-rel-  
(9CI) (CA INDEX NAME)

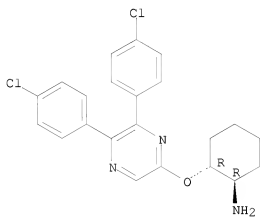
Relative stereochemistry.



RN 913273-86-6 CAPLUS

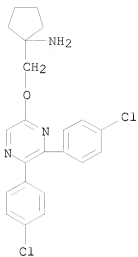
CN Cyclohexanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, (1R,2R)-rel-(9CI) (CA INDEX NAME)

Relative stereochemistry.



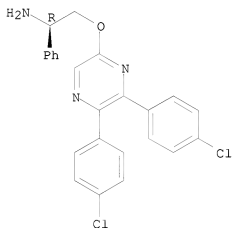
RN 913273-87-7 CAPLUS

CN Cyclopentanamine, 1-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]- (9CI) (CA INDEX NAME)



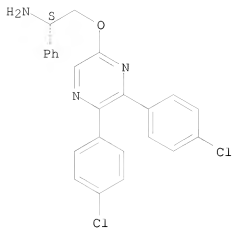
RN 913273-88-8 CAPLUS  
 CN Benzenemethanamine,  $\alpha$ -[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]-, ( $\alpha R$ )- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 913273-89-9 CAPLUS  
 CN Benzenemethanamine,  $\alpha$ -[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]-, ( $\alpha S$ )- (9CI) (CA INDEX NAME)

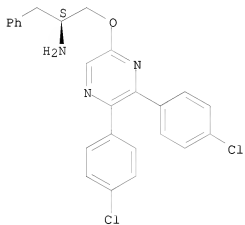
Absolute stereochemistry.



RN 913273-90-2 CAPLUS

CN Benzenesethanamine, α-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]-, (αS)- (9CI) (CA INDEX NAME)

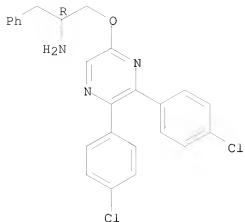
Absolute stereochemistry.



RN 913273-91-3 CAPLUS

CN Benzenesethanamine, α-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]-, (αR)- (9CI) (CA INDEX NAME)

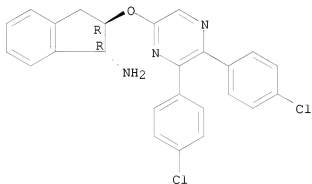
Absolute stereochemistry.



RN 913273-92-4 CAPLUS

CN 1H-Inden-1-amine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-2,3-dihydro-, (1R,2R)-rel- (9CI) (CA INDEX NAME)

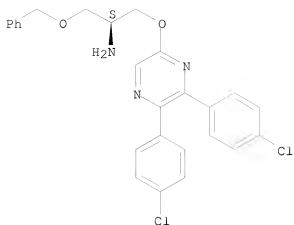
Relative stereochemistry.



RN 913273-93-5 CAPLUS

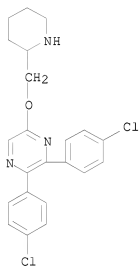
CN 2-Propanamine, 1-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-3-(phenylmethoxy)-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



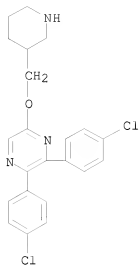
RN 913273-94-6 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-(2-piperidinylmethoxy)- (CA INDEX NAME)



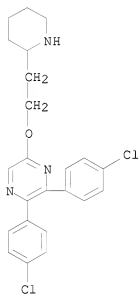
RN 913273-95-7 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-(3-piperidinylmethoxy)- (CA INDEX NAME)



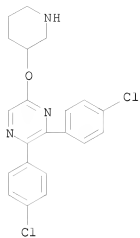
RN 913273-96-8 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[2-(2-piperidinyl)ethoxy]- (CA INDEX NAME)



RN 913273-97-9 CAPLUS

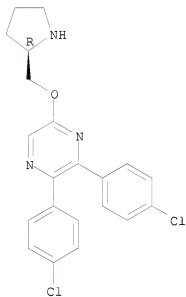
CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-(3-piperidinyl)- (CA INDEX NAME)



RN 913273-98-0 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(2R)-2-pyrrolidinylmethoxy]- (CA  
INDEX NAME)

Absolute stereochemistry.

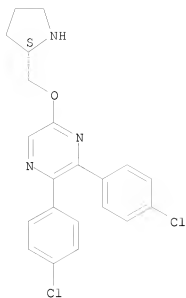


RN 913273-99-1 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[(2S)-2-pyrrolidinylmethoxy]- (CA  
INDEX NAME)

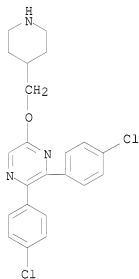
Absolute stereochemistry.





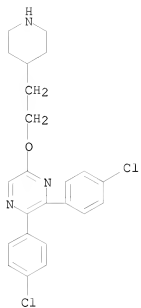
RN 913274-00-7 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-(4-piperidinylmethoxy)- (CA INDEX NAME)



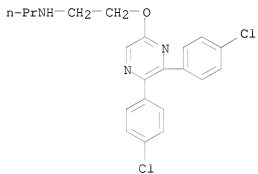
RN 913274-01-8 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[2-(4-piperidinyl)ethoxy]- (CA INDEX NAME)



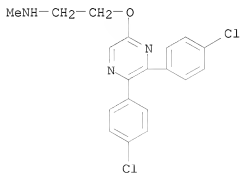
RN 913274-02-9 CAPLUS

CN 1-Propanamine, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]- (9CI)  
(CA INDEX NAME)

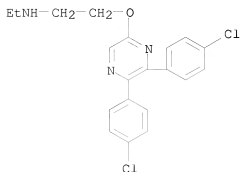


RN 913274-03-0 CAPLUS

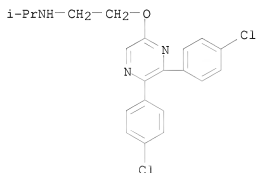
CN Ethanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N-methyl- (9CI) (CA  
INDEX NAME)



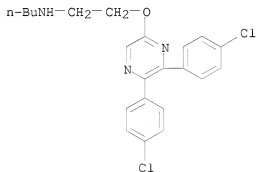
RN 913274-04-1 CAPLUS  
 CN Ethanamine, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N-ethyl- (9CI) (CA INDEX NAME)



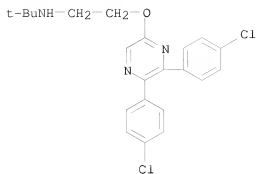
RN 913274-05-2 CAPLUS  
 CN 2-Propanamine, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]- (9CI) (CA INDEX NAME)



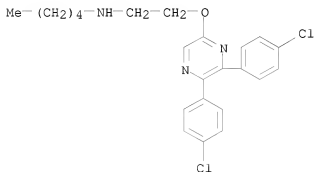
RN 913274-06-3 CAPLUS  
 CN 1-Butanamine, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]- (9CI) (CA INDEX NAME)



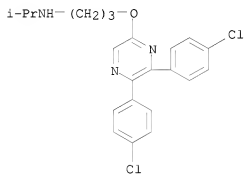
RN 913274-07-4 CAPLUS  
 CN 2-Propanamine, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]-2-methyl- (9CI) (CA INDEX NAME)



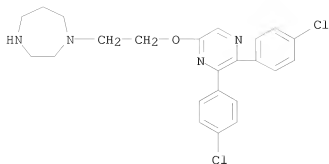
RN 913274-08-5 CAPLUS  
 CN 1-Pentanamine, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]- (9CI)  
 (CA INDEX NAME)



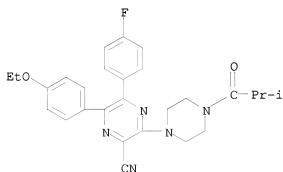
RN 913274-09-6 CAPLUS  
 CN 1-Propanamine, 3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-N-(1-methylethyl)-  
 (9CI) (CA INDEX NAME)



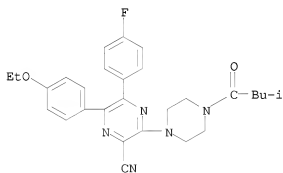
RN 913274-10-9 CAPLUS  
 CN 1H-1,4-Diazepine, 1-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]ethyl]hexahy  
 dro- (9CI) (CA INDEX NAME)



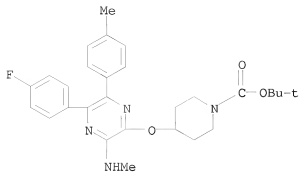
RN 913274-11-0 CAPLUS  
 CN Piperazine, 1-[3-cyano-5-(4-ethoxyphenyl)-6-(4-fluorophenyl)pyrazinyl]-4-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



RN 913274-12-1 CAPLUS  
 CN Piperazine, 1-[3-cyano-5-(4-ethoxyphenyl)-6-(4-fluorophenyl)pyrazinyl]-4-(3-methyl-1-oxobutyl)- (9CI) (CA INDEX NAME)

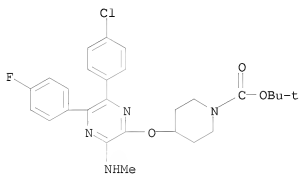


RN 913274-22-3 CAPLUS  
 CN 1-Piperidinecarboxylic acid, 4-[[5-(4-fluorophenyl)-3-(methylamino)-6-(4-methylphenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



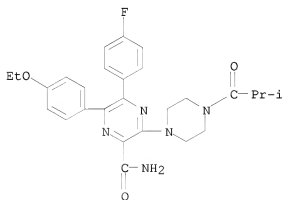
RN 913274-23-4 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[[6-(4-chlorophenyl)-5-(4-fluorophenyl)-3-(methylamino)pyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



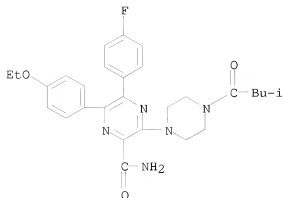
RN 913274-30-3 CAPLUS

CN Pyrazinecarboxamide, 6-(4-ethoxyphenyl)-5-(4-fluorophenyl)-3-[4-(2-methyl-1-oxopropyl)-1-piperazinyl]- (9CI) (CA INDEX NAME)



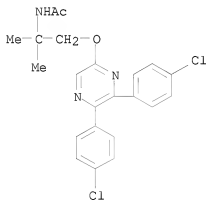
RN 913274-31-4 CAPLUS

CN Pyrazinecarboxamide, 6-(4-ethoxyphenyl)-5-(4-fluorophenyl)-3-[4-(3-methyl-1-oxobutyl)-1-piperazinyl]- (9CI) (CA INDEX NAME)



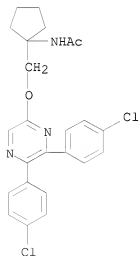
RN 913275-03-3 CAPLUS

CN Acetamide, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]-  
(9CI) (CA INDEX NAME)



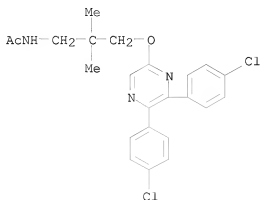
RN 913275-04-4 CAPLUS

CN Acetamide, N-[1-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]cyclopentyl]-  
(9CI) (CA INDEX NAME)



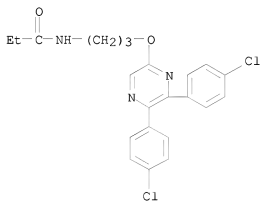
RN 913275-05-5 CAPLUS

CN Acetamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-2,2-dimethylpropyl]- (9CI) (CA INDEX NAME)



RN 913275-06-6 CAPLUS

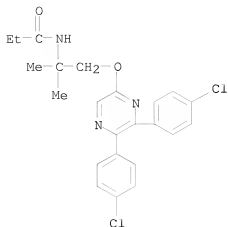
CN Propanamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]- (9CI)  
(CA INDEX NAME)



RN 913275-07-7 CAPLUS

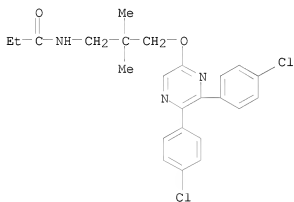
CN Propanamide, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]- (9CI) (CA INDEX NAME)





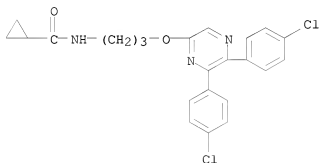
RN 913275-08-8 CAPLUS

CN Propanamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-2,2-dimethylpropyl]- (9CI) (CA INDEX NAME)



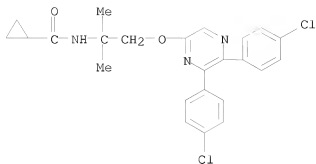
RN 913275-09-9 CAPLUS

CN Cyclopropanecarboxamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]- (9CI) (CA INDEX NAME)

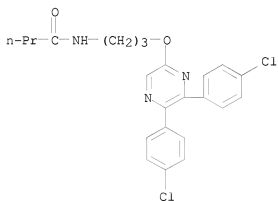


RN 913275-10-2 CAPLUS

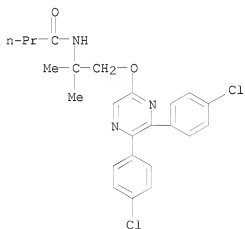
CN Cyclopropanecarboxamide, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]- (9CI) (CA INDEX NAME)



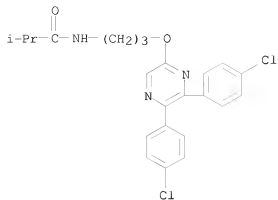
RN 913275-11-3 CAPLUS  
 CN Butanamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]- (9CI)  
 (CA INDEX NAME)



RN 913275-12-4 CAPLUS  
 CN Butanamide, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]- (9CI) (CA INDEX NAME)

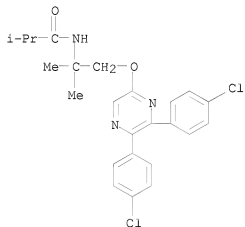


RN 913275-13-5 CAPLUS  
 CN Propanamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-2-methyl- (9CI) (CA INDEX NAME)



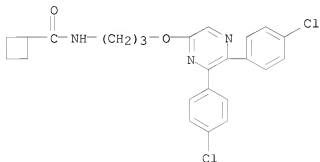
RN 913275-14-6 CAPLUS

CN Propanamide, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]- (9CI) (CA INDEX NAME)



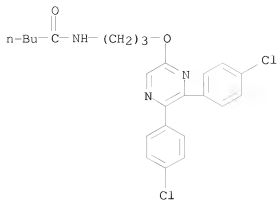
RN 913275-15-7 CAPLUS

CN Cyclobutanecarboxamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]- (9CI) (CA INDEX NAME)



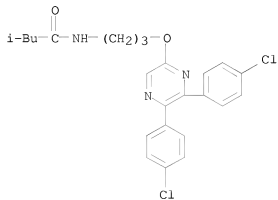
RN 913275-16-8 CAPLUS

CN Pentanamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]- (9CI) (CA INDEX NAME)



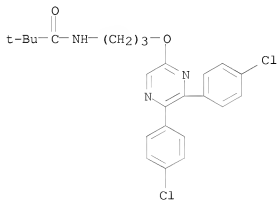
RN 913275-17-9 CAPLUS

CN Butanamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-3-methyl- (9CI) (CA INDEX NAME)



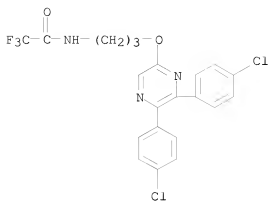
RN 913275-18-0 CAPLUS

CN Propanamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-2,2-dimethyl- (9CI) (CA INDEX NAME)



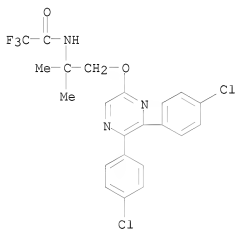
RN 913275-19-1 CAPLUS

CN Acetamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-2,2,2-trifluoro- (9CI) (CA INDEX NAME)



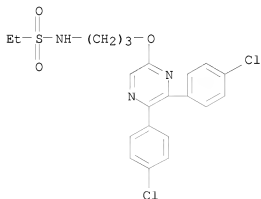
RN 913275-20-4 CAPLUS

CN Acetamide, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]-2,2,2-trifluoro- (9CI) (CA INDEX NAME)



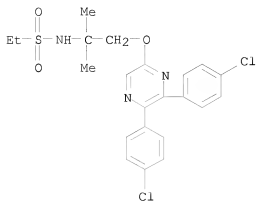
RN 913275-21-5 CAPLUS

CN Ethanesulfonamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]- (9CI) (CA INDEX NAME)



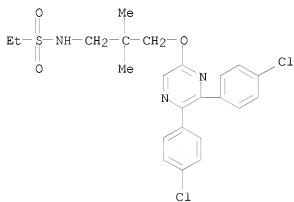
RN 913275-22-6 CAPLUS

CN Ethanesulfonamide, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]- (9CI) (CA INDEX NAME)



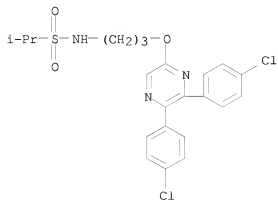
RN 913275-23-7 CAPLUS

CN Ethanesulfonamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-2,2-dimethylpropyl]- (9CI) (CA INDEX NAME)



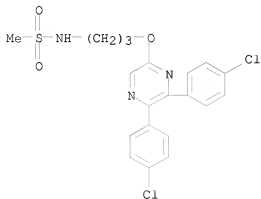
RN 913275-24-8 CAPLUS

CN 2-Propanesulfonamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]- (9CI) (CA INDEX NAME)



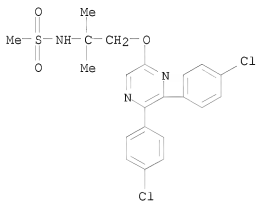
RN 913275-25-9 CAPLUS

CN Methanesulfonamide, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-  
(9CI) (CA INDEX NAME)



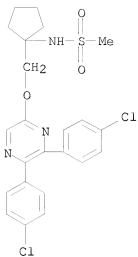
RN 913275-26-0 CAPLUS

CN Methanesulfonamide, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]- (9CI) (CA INDEX NAME)



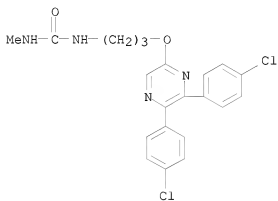
RN 913275-27-1 CAPLUS

CN Methanesulfonamide, N-[1-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]cyclopentyl]- (9CI) (CA INDEX NAME)



RN 913275-28-2 CAPLUS

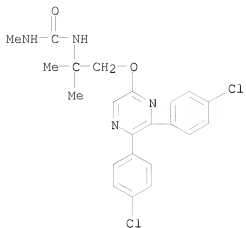
CN Urea, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-N'-methyl- (9CI)  
(CA INDEX NAME)



RN 913275-29-3 CAPLUS

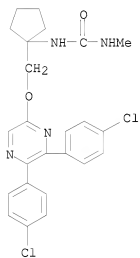
CN Urea, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]-N'-methyl- (9CI) (CA INDEX NAME)





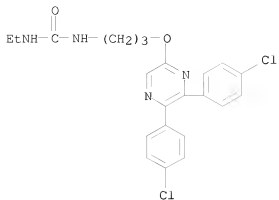
RN 913275-30-6 CAPLUS

CN Urea, N-[1-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]cyclopentyl]-N'-methyl- (9CI) (CA INDEX NAME)



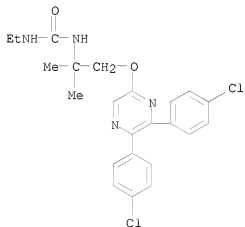
RN 913275-31-7 CAPLUS

CN Urea, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-N'-ethyl- (9CI)  
(CA INDEX NAME)



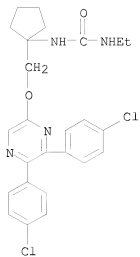
RN 913275-32-8 CAPLUS

CN Urea, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]-N'-ethyl- (9CI) (CA INDEX NAME)



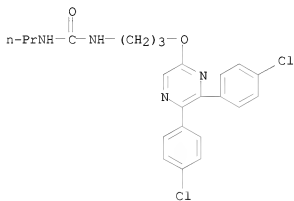
RN 913275-33-9 CAPLUS

CN Urea, N-[1-[[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]methyl]cyclopentyl]-N'-ethyl- (9CI) (CA INDEX NAME)



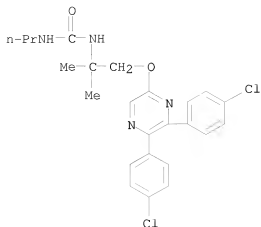
RN 913275-34-0 CAPLUS

CN Urea, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-N'-propyl- (9CI)  
(CA INDEX NAME)



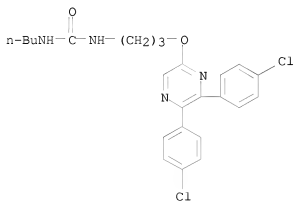
RN 913275-35-1 CAPLUS

CN Urea, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]-N'-propyl- (9CI) (CA INDEX NAME)



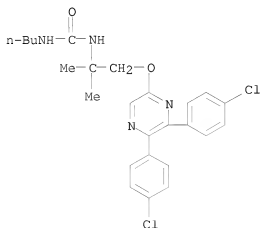
RN 913275-36-2 CAPLUS

CN Urea, N-[3-([5,6-bis(4-chlorophenyl)pyrazinyl]oxy)propyl]-N'-butyl- (9CI)  
(CA INDEX NAME)



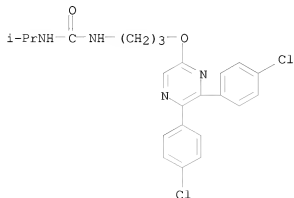
RN 913275-37-3 CAPLUS

CN Urea, N-[2-([5,6-bis(4-chlorophenyl)pyrazinyl]oxy)-1,1-dimethylethyl]-N'-butyl- (9CI) (CA INDEX NAME)



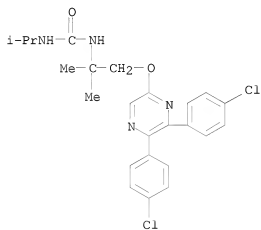
RN 913275-38-4 CAPLUS

CN Urea, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-N'-(1-methylethyl)- (9CI) (CA INDEX NAME)



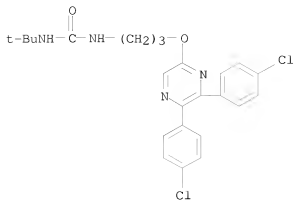
RN 913275-39-5 CAPLUS

CN Urea, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]-N'-(1-methylethyl)- (9CI) (CA INDEX NAME)



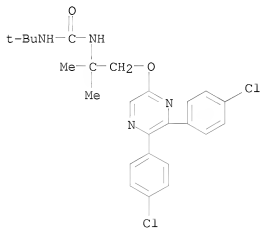
RN 913275-40-8 CAPLUS

CN Urea, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-N'-(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



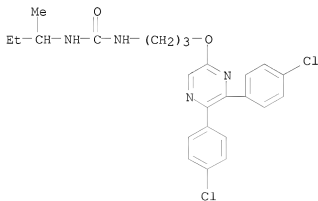
RN 913275-41-9 CAPLUS

Urea, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]-N'-(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



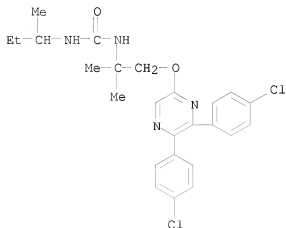
RN 913275-42-0 CAPLUS

CN Urea, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-N'-(1-methylpropyl)- (9CI) (CA INDEX NAME)



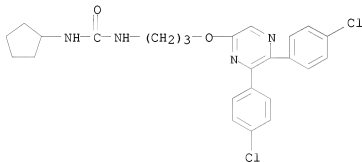
RN 913275-43-1 CAPLUS

CN Urea, N-[2-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-1,1-dimethylethyl]-N'-(1-methylpropyl)- (9CI) (CA INDEX NAME)



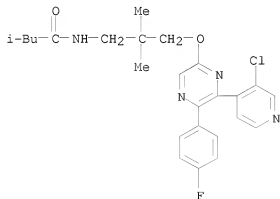
RN 913275-44-2 CAPLUS

CN Urea, N-[3-[[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]propyl]-N'-cyclopentyl- (9CI) (CA INDEX NAME)



RN 913275-45-3 CAPLUS

CN Butanamide, N-[3-[[6-(3-chloro-4-pyridinyl)-5-(4-fluorophenyl)pyrazinyl]oxy]-2,2-dimethylpropyl]-3-methyl- (9CI) (CA INDEX NAME)



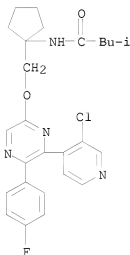
IT 913275-46-4P 913275-95-3P 913275-97-5P  
 913275-98-6P 913275-99-7P 913276-00-3P  
 913276-01-4P 913276-02-5P 913276-03-6P  
 913276-04-7P 913276-05-8P 913276-51-4P  
 913276-52-5P 913276-53-6P 913276-91-2P  
 913277-85-7P 913277-86-8P 913280-74-7P  
 913282-55-0P 913282-56-1P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of substituted heteroaryl compds. useful in treatment of diseases responsive to CB1 activation)

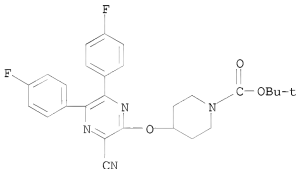
RN 913275-46-4 CAPLUS

CN Butanamide, N-[1-[[[6-(3-chloro-4-pyridinyl)-5-(4-fluorophenyl)pyrazinyl]oxy]methyl]cyclopentyl]-3-methyl- (9CI) (CA INDEX NAME)



RN 913275-95-3 CAPLUS

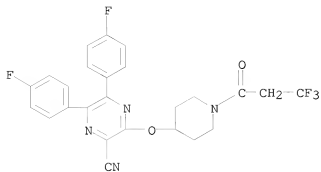
CN 1-Piperidinecarboxylic acid, 4-[[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 913275-97-5 CAPLUS

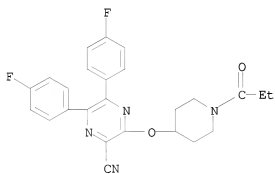
CN Piperidine, 4-[[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(3,3,3-trifluoro-1-oxopropyl)- (9CI) (CA INDEX NAME)





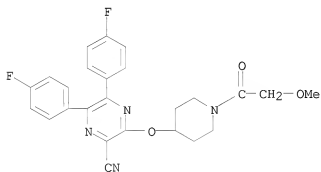
RN 913275-98-6 CAPLUS

CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(1-oxopropyl)- (9CI) (CA INDEX NAME)



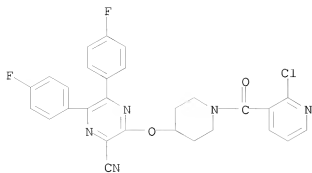
RN 913275-99-7 CAPLUS

CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(methoxyacetyl)- (9CI) (CA INDEX NAME)



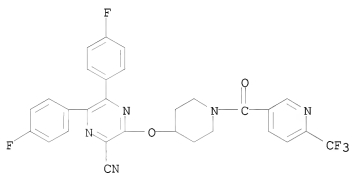
RN 913276-00-3 CAPLUS

CN Piperidine, 1-[(2-chloro-3-pyridinyl)carbonyl]-4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]- (9CI) (CA INDEX NAME)



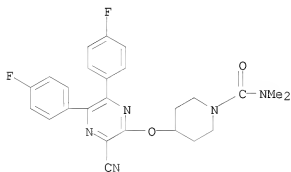
RN 913276-01-4 CAPLUS

CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-[[6-(trifluoromethyl)-3-pyridinyl]carbonyl]- (9CI) (CA INDEX NAME)



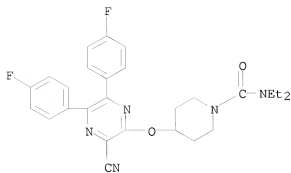
RN 913276-02-5 CAPLUS

CN 1-Piperidinecarboxamide, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-N,N-dimethyl- (9CI) (CA INDEX NAME)



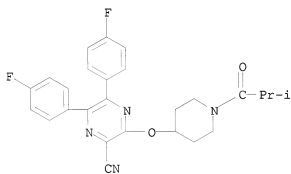
RN 913276-03-6 CAPLUS

CN 1-Piperidinecarboxamide, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-N,N-diethyl- (9CI) (CA INDEX NAME)



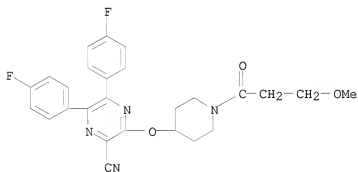
RN 913276-04-7 CAPLUS

CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



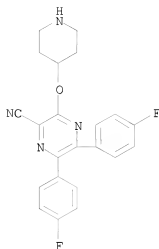
RN 913276-05-8 CAPLUS

CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(3-methoxy-1-oxopropyl)- (9CI) (CA INDEX NAME)



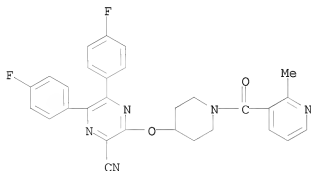
RN 913276-51-4 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-(4-piperidinyl)- (9CI) (CA INDEX NAME)



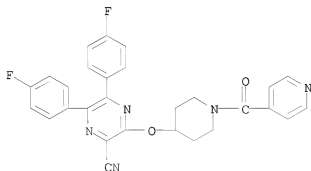
RN 913276-52-5 CAPLUS

CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-[(2-methyl-3-pyridinyl)carbonyl]- (9CI) (CA INDEX NAME)



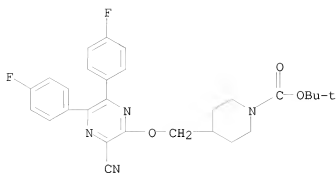
RN 913276-53-6 CAPLUS

CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(4-pyridinylcarbonyl)- (9CI) (CA INDEX NAME)



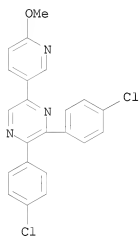
RN 913276-91-2 CAPLUS

CN 1-Piperidinecarboxylic acid, 4-[[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]methyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



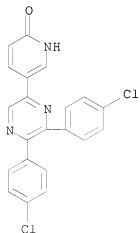
RN 913277-85-7 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-(6-methoxy-3-pyridinyl)- (CA INDEX NAME)



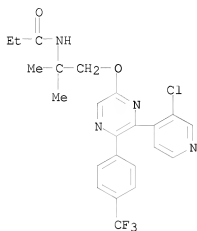
RN 913277-86-8 CAPLUS

CN 2(1H)-Pyridinone, 5-[5,6-bis(4-chlorophenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



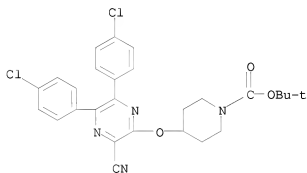
RN 913280-74-7 CAPLUS

CN Propanamide, N-[2-[[6-(3-chloro-4-pyridinyl)-5-[4-(trifluoromethyl)phenyl]pyrazinyl]oxy]-1,1-dimethylethyl]- (9CI) (CA INDEX NAME)



RN 913282-55-0 CAPLUS

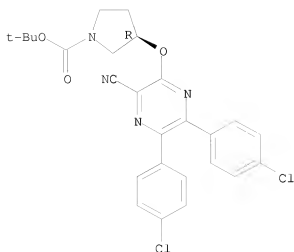
CN 1-Piperidinecarboxylic acid, 4-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



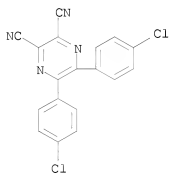
RN 913282-56-1 CAPLUS

CN 1-Pyrrolidinecarboxylic acid, 3-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, 1,1-dimethylethyl ester, (3R)- (9CI) (CA INDEX NAME)

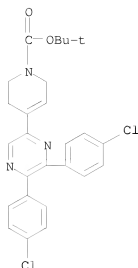
Absolute stereochemistry.



IT 810685-47-3P 913282-69-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation of substituted heteroaryl compds. useful in treatment of  
 diseases responsive to Cbl activation)  
 RN 810685-47-3 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



RN 913282-69-6 CAPLUS  
 CN 1(2H)-Pyridinecarboxylic acid, 4-[5,6-bis(4-chlorophenyl)pyrazinyl]-3,6-  
 dihydro-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



L14 ANSWER 24 OF 399 CAPLUS COPYRIGHT 2007 ACS on SIN

ACCESSION NUMBER: 2006:980075 CAPLUS

DOCUMENT NUMBER: 145:336081

TITLE: Preparation of indanylamino pyrazinylpyridines as corticotropin releasing factor CRF1 antagonists for treatment of CNS disorders.

INVENTOR(S): Verhoest, Patrick R.; Hoffmann, Robert L.

PATENT ASSIGNEE(S): Pfizer Inc, USA

SOURCE: U.S. Pat. Appl. Publ., 11pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

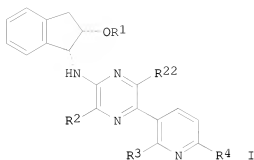
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006211710	A1	20060921	US 2006-363009	20060227
AU 2006238976	A1	20061102	AU 2006-238976	20060306
WO 2006114666	A1	20061102	WO 2006-IB564	20060306
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
NL 1031384	A1	20060920	NL 2006-1031384	20060316
NL 1031384	C2	20070123		
IN 2007DN07288	A	20071026	IN 2007-DN7288	20070921
PRIORITY APPLN. INFO.:			US 2005-662917P	P 20050317
			WO 2006-IB564	W 20060306

OTHER SOURCE(S): MARPAT 145:336081

GI





AB Title compds. (I; R1 = alkyl, alkenyl, alkynyl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl; R2, R22 = alkyl, alkenyl, alkynyl; R3 = halo, alkyl, alkenyl, alkynyl, alkoxy, alkenyloxy, alkynyloxy; R4 = R3, amino), were prepared. Thus, (5-boronic acid-6-methylpyridin-2-yl)dimethylamine (preparation given), acetic acid (1R,2S)-1-(3,6-diethyl-5-iodopyrazin-2-ylamino)indan-2-yl ester, (preparation given), Pd(OAc)<sub>2</sub>, 1,1'-bis(diphenylphosphino)ferrocene, and KHF<sub>2</sub> were refluxed 18 h in THF to give acetic acid (1R,2S)-1-[5-(6-dimethylamino-2-methylpyridin-3-yl)-3,6-diethylpyrazin-2-ylamino]indan-2-yl ester. The latter bound to CRF1 receptors with K<sub>i</sub> = 19 nM.

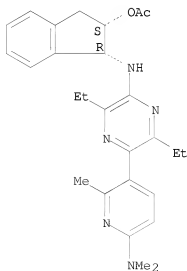
IT 910054-69-2P 910054-70-5P 910054-71-6P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(claimed compound; preparation of indanylamino pyrazinylpyridines as corticotropin releasing factor CRF1 antagonists for treatment of CNS disorders)

RN 910054-69-2 CAPLUS

CN 1H-Inden-2-ol, 1-[[5-[6-(dimethylamino)-2-methyl-3-pyridinyl]-3,6-diethylpyrazinyl]amino]-2,3-dihydro-, acetate (ester), (1R,2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 910054-70-5 CAPLUS

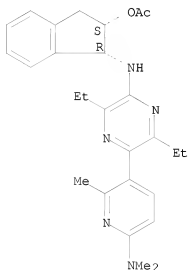
CN 1H-Inden-2-ol, 1-[[5-[6-(dimethylamino)-2-methyl-3-pyridinyl]-3,6-diethylpyrazinyl]amino]-2,3-dihydro-, acetate (ester), (1R,2S)-, mono(4-methylbenzenesulfonate) (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 910054-69-2

CMF C27 H33 N5 O2

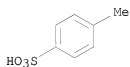
Absolute stereochemistry.



CM 2

CRN 104-15-4

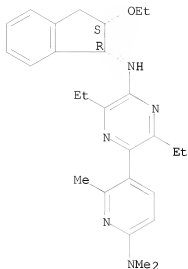
CMF C7 H8 O3 S



RN 910054-71-6 CAPLUS

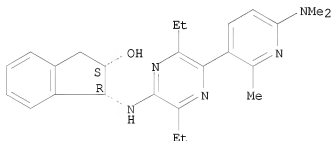
CN Pyrazinamine, 5-[6-(dimethylamino)-2-methyl-3-pyridinyl]-N-[(1R,2S)-2-ethoxy-2,3-dihydro-1H-inden-1-yl]-3,6-diethyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 910054-75-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation of indanylamino pyrazinylpyridines as corticotropin releasing  
 factor CRF1 antagonists for treatment of CNS disorders)  
 RN 910054-75-0 CAPLUS  
 CN 1H-Inden-2-ol, 1-[[5-[6-(dimethylamino)-2-methyl-3-pyridinyl]-3,6-  
 diethylpyrazinyl]amino]-2,3-dihydro-, (1R,2S)- (9CI) (CA INDEX NAME)

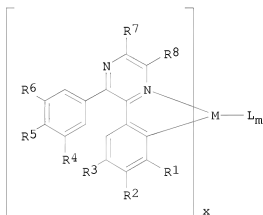
Absolute stereochemistry.



L14 ANSWER 25 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:977796 CAPLUS  
 DOCUMENT NUMBER: 145:336190  
 TITLE: Cyclometalated organometallic Group 9 and Group 10  
 metal 2,3-diarylpyrazine phosphorescent complexes,  
 highly efficient light-emitting elements and  
 light-emitting devices with increased recombination  
 efficiency  
 INVENTOR(S): Inoue, Hideko; Shitagaki, Satoko; Seo, Satoshi;  
 Ohsawa, Nobuharu  
 PATENT ASSIGNEE(S): Semiconductor Energy Laboratory Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 158pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006098460	A1	20060921	WO 2006-JP305474	20060314
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
JP 2007176917	A	20070712	JP 2006-71610	20060315
PRIORITY APPLN. INFO.:			JP 2005-76454	A 20050317
			JP 2005-346060	A 20051130
OTHER SOURCE(S):		MARPAT 145:336190		
GI				



AB Cyclometalated 2,3-diarylpyrazine complexes I [R1-R6 = H, electron-withdrawing substituents, preferably R1-R6 = halo, CF3, CN, alkoxycarbonyl; R7, R8 = H, C1-4 alkyl, preferably R7, R8 = H, Me, Et, iPr, CHMeEt; L = monoanionic bidentate ligand, preferably L =  $\beta$ -diketonate, dialkyl malonate, picolinate, 2-pyrrolidinecarboxylate, salicylaldehyde and salicylaldehyde anions, tetrakis(pyrazolyl)borate; M = Group 9 or Group 10 metal, preferably M = Ir, Pt; x = 1, 2; m = 0, 1; preferably M = Ir, x = 2, m = 1], useful as light-emitting phosphorescent substances for organic light-emitting diodes, having improved electron-hole recombination efficiency, were prepared by heterocyclization of 1,2-diaryl-1,2-ethanediones with aliphatic 1,2-diamines with subsequent aromatization, cyclometalation and complexation with HL or L<sup>-</sup> salt. Processes for fabrication of light-emitting layers, diodes containing said layers and electronic devices incorporating said diodes also are described. In an example, complex I [R1 = R3 = R4 = R6 = R7 = R8 = H, R2 = R5 = F, x = 2, m = 1, L = 2,4-pentanedionato(1-), M = Ir] was prepared by heterocyclization of 4,4'-difluorobenzil with 1,2-ethanediamine followed by aromatization to give the ligand, 2,3-bis(4-

fluorophenyl)pyrazine, with subsequent cyclometalation by IrCl<sub>3</sub> yielding di-μ-chlorobis[2,3-bis(4-fluorophenyl)pyrazinato(1-)-κN,κC]diiridium and reaction with 2,4-pentanedione and Na<sub>2</sub>CO<sub>3</sub> (yield 31%). In another example, complex 8, exhibiting phosphorescence at 570 nm and decomposition point of 312°, was used for fabrication of light-emitting device by placing of a layer containing 5% of 8 in 4,4'-bis(9-carbazolyl)-1,1'-biphenyl between a hole-injecting and -transporting layers of copper phthalocyanine and NPB on ITO and electron-transporting and -injecting layers of bathocuproin and Al 8-quinolinolate, resp., followed by calcium fluoride on aluminum; the light-emitting element exhibited luminance of 520 cd m<sup>-2</sup> at a current of 0.887 mA cm<sup>-2</sup> and a voltage of 8.8 V with 17% quantum efficiency.

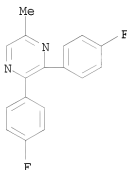
IT 199783-12-5P 909568-11-2P 909568-14-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of iridium cyclometalated 2,3-diarylpyrazine phosphorescent chelate complexes as components for light-emitting electronic devices)

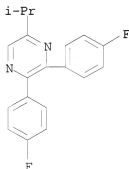
RN 199783-12-5 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-methyl- (CA INDEX NAME)



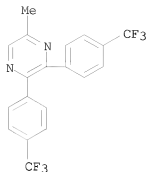
RN 909568-11-2 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-(1-methylethyl)- (CA INDEX NAME)



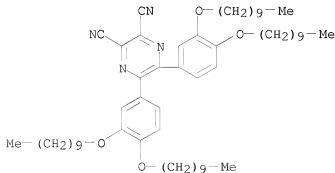
RN 909568-14-5 CAPLUS

CN Pyrazine, 5-methyl-2,3-bis[4-(trifluoromethyl)phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 26 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:943708 CAPLUS  
 DOCUMENT NUMBER: 147:117708  
 TITLE: Product class 10: anthraquinone and phenanthrenedione imines and diimines  
 AUTHOR(S): Avendano, C.; Menendez, J. C.  
 CORPORATE SOURCE: Departamento de Quimica Organica y Farmaceutica, Facultad de Farmacia, Universidad Complutense, Madrid, 28040, Spain  
 SOURCE: Science of Synthesis (2006), 28, 735-806  
 CODEN: SSCYJ9  
 PUBLISHER: Georg Thieme Verlag  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English  
 AB A review of methods to prepare anthraquinone and phenanthrenedione imines and diimines.  
 IT 251480-27-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (review of preparation of anthraquinone and phenanthrenedione imines and diimines)  
 RN 251480-27-0 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(decyloxy)phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 182 THERE ARE 182 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 27 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

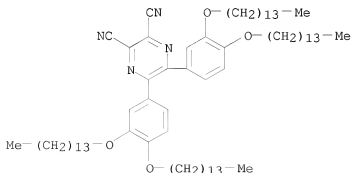
ACCESSION NUMBER: 2006:941086 CAPLUS  
 DOCUMENT NUMBER: 145:326346  
 TITLE: Homeotropically-aligning porphyrazine compounds,  
 discotic liquid-crystal film from them, conductors and  
 semiconductors having the film, and electronic devices  
 Ota, Kazuchika  
 INVENTOR(S): Shinshu University, Japan  
 PATENT ASSIGNEE(S): Jpn. Kokai Tokkyo Koho, 23pp.  
 SOURCE: CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006241124	A	20060914	JP 2005-62783	20050307
PRIORITY APPLN. INFO.:			JP 2005-62783	20050307
OTHER SOURCE(S):	MARPAT 145:326346			

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The compds. I [R = linear, branched, or cyclic hydrocarbyl, poly(oxyethylene) group; M = divalent metal] are made into a discotic liquid crystal film to spontaneously develop homeotropic alignment. Also claimed are conductors and semiconductors having the discotic liquid crystal film on a substrate and electronic devices containing the conductors or the semiconductors, e.g. solar cells, charge-transporting layer of organic electroluminescent devices, charge injection layer of organic lasers, IC tags, gas sensors, optical memory devices, photoconductors for optical imaging devices, etc. I show homogeneous homeotropic alignment in a wide area between room temperature and m.p. or decomposition point and are free from alignment defects.  
 IT 909301-36-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (homeotropically-aligning porphyrazine compds., discotic liquid-crystal film from them, and conductors and semiconductors having the film for electronic devices)  
 RN 909301-36-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(tetradecyloxy)phenyl]- (CA INDEX NAME)



L14 ANSWER 28 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:903926 CAPLUS

DOCUMENT NUMBER: 146:228844

TITLE: New fluorescent dipolar pyrazine derivatives for non-doped red organic light-emitting diodes

AUTHOR(S): Gao, Baoxiang; Zhou, Quanguo; Geng, Yanhou; Cheng, Yanxiang; Ma, Dongge; Xie, Zhiyuan; Wang, Lixiang; Wang, Fosong

CORPORATE SOURCE: State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Graduate School of the Chinese Academy of Sciences, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China

SOURCE: Materials Chemistry and Physics (2006), 99(2-3), 247-252

CODEN: MCHPDR; ISSN: 0254-0584

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Dipolar fluorescent compds. containing electron-accepting pyrazine-2,3-dicarbonitrile and electron-donating arylamine moiety have been designed and synthesized. The optical and electrochem. properties of these compds. can be adjusted by changing  $\pi$ -bridge length and the donor (D) strength. Organic light-emitting devices based on these compds. are fabricated.

Saturated red emission of (0.67, 0.33) and the external quantum efficiency as high as 1.41% have been demonstrated for one of these compds.

IT 878393-95-4P 888947-50-0P 898546-75-3P

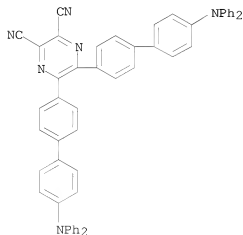
924727-47-9P 924727-48-0P 924727-49-1P

924727-50-4P 924727-51-5P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluorescent dipolar pyrazine derivs. for non-doped red organic light-emitting diodes)

RN 878393-95-4 CAPLUS

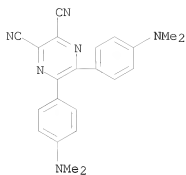
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



RN 888947-50-0 CAPLUS

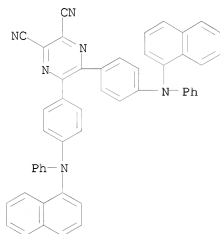
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dimethylamino)phenyl]- (CA INDEX NAME)





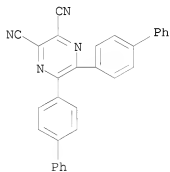
RN 898546-75-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1-naphthalenylphenylamino)phenyl]-  
(CA INDEX NAME)



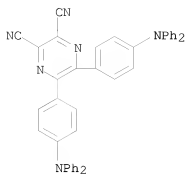
RN 924727-47-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis([1,1'-biphenyl]-4-yl)- (CA INDEX  
NAME)



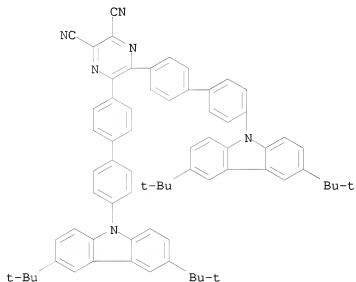
RN 924727-48-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(diphenylamino)phenyl]- (CA INDEX  
NAME)



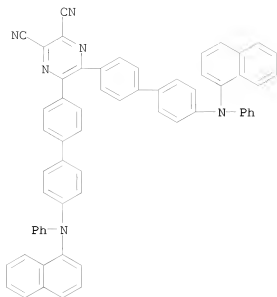
RN 924727-49-1 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4'-(3,6-bis(1,1-dimethylethyl)-9H-carbazol-9-yl)][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

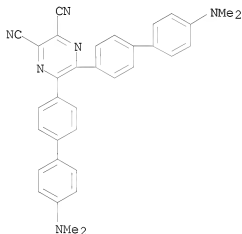


RN 924727-50-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4'-(1-naphthalenylphenylamino)][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



RN 924727-51-5 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4'-(dimethylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 29 OF 399 CAPLUS COPYRIGHT 2007 ACS on SIN

ACCESSION NUMBER: 2006:827360 CAPLUS

DOCUMENT NUMBER: 146:215346

TITLE: Dibenzothiophene/oxide and quinoxaline/pyrazine derivatives serving as electron-transport materials  
 AUTHOR(S): Huang, Tai-Hsiang; Whang, Wha-Tzong; Shen, Jiun Yi; Wen, Yuh-Sheng; Lin, Jiann T.; Ke, Tung-Huei; Chen, Li-Yin; Wu, Chung-Chih

CORPORATE SOURCE: Department of Materials Science and Engineering, National Chiao Tung University, Hsin Chu, 300, Taiwan  
 SOURCE: Advanced Functional Materials (2006), 16(11), 1449-1456

PUBLISHER: CODEN: AFMDC6; ISSN: 1616-301X  
DOCUMENT TYPE: Wiley-VCH Verlag GmbH & Co. KGaA  
LANGUAGE: English

AB 2,8-Disubstituted dibenzothiophene and 2,8-disubstituted dibenzothiophene-S,S-dioxide derivs. containing quinoxaline and pyrazine moieties were synthesized via three key steps: (i) palladium-catalyzed Sonogashira coupling reaction to form dialkynes; (ii) conversion of the dialkynes to diones; and (iii) condensation of the diones with diamines. Single-crystal characterization of 2,8-di(6,7-dimethyl-3-phenyl-2-quinoxaliny)-5H-5λ6-dibenzo[b,d]thiophene-5,5-dione indicates a triclinic crystal structure with space group P1 and a noncoplanar structure. These new materials are amorphous, with glass-transition temps. ranging from 132 to 194°. (Cpd) exhibit high electron mobilities and serve as effective electron-transport materials for organic light-emitting devices. Double-layer devices are fabricated with the structure indium tin oxide (ITO)/Qn/Cpd/LiF/Al, where yellow-emitting 2,3-bis[4-(N-phenyl-9-ethyl-3-carbazolylamino)phenyl]quinoxaline (Qn) serves as the emitting layer. An external quantum efficiency of 1.41 %, a power efficiency of 4.94 lm W<sup>-1</sup>, and a current efficiency of 1.62 cd A<sup>-1</sup> are achieved at a c.d. of 100 mA cm<sup>-2</sup>.

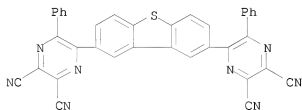
IT 923605-43-0 923605-45-2

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(dibenzothiophene/oxide and quinoxaline/pyrazine derivs. serving as electron-transport materials for electroluminescent materials for organic LED)

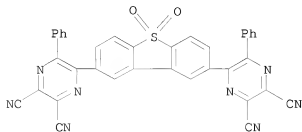
RN 923605-43-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,5'-(2,8-dibenzothiophenediyl)bis[6-phenyl- (CA INDEX NAME)]



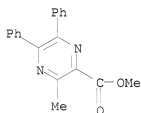
RN 923605-45-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,5'-(5,5-dioxido-2,8-dibenzothiophenediyl)bis[6-phenyl- (CA INDEX NAME)]

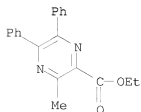


REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

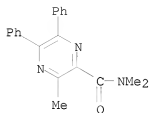
ACCESSION NUMBER: 2006:646507 CAPLUS  
 DOCUMENT NUMBER: 145:271733  
 TITLE: Straightforward Access to Pyrazines, Piperazinones, and Quinoxalines by Reactions of 1,2-Diaza-1,3-butadienes with 1,2-Diamines under Solution, Solvent-Free, or Solid-Phase Conditions  
 AUTHOR(S): Aparicio, Domitila; Attanasi, Orazio A.; Filippone, Paolino; Ignacio, Roberto; Lillini, Samuele; Mantellini, Fabio; Palacios, Francisco; de Santos, Jesus M.  
 CORPORATE SOURCE: Istituto di Chimica Organica, Universita degli Studi di Urbino Carlo Bo, Urbino, 61029, Italy  
 SOURCE: Journal of Organic Chemistry (2006), 71(16), 5897-5905  
 CODEN: JOCEAH; ISSN: 0022-3263  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 145:271733  
 AB The preparation of tetrahydropyrazines, dihydropyrazines, pyrazines, piperazinones, and quinoxalines by 1,4-addition of 1,2-diamines to 1,2-diaza-1,3-butadienes bearing carboxylate, carboxamide, or phosphorylated groups at the terminal carbon and subsequent internal heterocyclization is described. The solvent-free reaction of carboxylated 1,2-diaza-1,3-butadienes with the same reagents affords piperazinones, while phosphorylated 1,2-diaza-1,3-butadienes yield phosphorylated pyrazines. The solid-phase reaction of polymer-bound 1,2-diaza-1,3-butadienes with 1,2-diamines produces pyrazines.  
 IT 861822-36-8P 861822-37-9P 907161-24-4P 907161-25-5P 907161-26-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of pyrazines, piperazinones, and quinoxalines by 1,4-addition/heterocyclization of 1,2-diaza-1,3-butadienes with 1,2-diamines under solution, solvent-free, or solid-phase conditions)  
 RN 861822-36-8 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-methyl-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



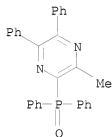
RN 861822-37-9 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



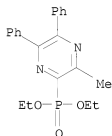
RN 907161-24-4 CAPLUS  
CN Pyrazinecarboxamide, N,N,3-trimethyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 907161-25-5 CAPLUS  
CN Pyrazine, 2-(diphenylphosphinyl)-3-methyl-5,6-diphenyl- (CA INDEX NAME)



RN 907161-26-6 CAPLUS  
CN Phosphonic acid, (3-methyl-5,6-diphenylpyrazinyl)-, diethyl ester (9CI)  
(CA INDEX NAME)



REFERENCE COUNT: 108 THERE ARE 108 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L14 ANSWER 31 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2006:636865 CAPLUS  
DOCUMENT NUMBER: 145:103725  
TITLE: Preparation of aminopyrazines for treating glaucoma and other rho kinase-mediated diseases and conditions.  
INVENTOR(S): Hellberg, Mark R.; Rusinko, Andrew  
PATENT ASSIGNEE(S): Alcon, Inc., USA  
SOURCE: U.S. Pat. Appl. Publ., 35 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent

LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006142307	A1	20060629	US 2005-302825	20051214
AU 2005322338	A1	20060706	AU 2005-322338	20051214
CA 2590261	A1	20060706	CA 2005-2590261	20051214
WO 2006071548	A2	20060706	WO 2005-US45384	20051214
WO 2006071548	A3	20060908		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

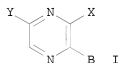
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

EP 1830853 A2 20070912 EP 2005-854156 20051214

R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR

PRIORITY APPLN. INFO.:  
 US 2004-639389P P 20041227  
 WO 2005-US45384 W 20051214

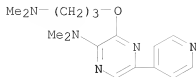
OTHER SOURCE(S): MARPAT 145:103725  
 GI



AB Title compds. [I; Y = 4-pyridyl, 2-methyl-4-pyridyl, 4-pyrazolyl, indazol-4-yl, quinolin-5-yl, etc.; X = OR1, NR2R3; R1-R3 = H, (substituted) alkyl, cycloalkyl, heterocyclyl; NR2R3, NR7R8 = heterocyclyl; B = NR7R8; R7, R8 = H, (substituted) alkyl, cycloalkyl, heterocyclyl], were prepared Thus, 1-[3-(azepan-1-yl)-6-(pyridin-4-yl)pyrazin-2-yl]-4-methyl-1,4-diazepane dihydrochloride (preparation from chloropyrazine, hexamethyleneimine, 4-methyl-1,4-diazepane, and 4-pyridylboronic acid given) inhibited human recombinant rho kinase (ROCK-II) with IC50 = 0.02 nM.

IT 894807-80-8P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of aminopyrazines for treating glaucoma and other rho kinase-mediated diseases and conditions)

RN 894807-80-8 CAPLUS  
 CN Pyrazinamine, 3-[3-(dimethylamino)propoxy]-N,N-dimethyl-5-(4-pyridinyl)-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

L14 ANSWER 32 OF 399 CAPLUS COPYRIGHT 2007 ACS on SIN

ACCESSION NUMBER: 2006:632732 CAPLUS

DOCUMENT NUMBER: 145:103546

TITLE: Preparation of biscarbazole derivatives as charge-transporting materials, and organic electroluminescent elements

INVENTOR(S): Yabe, Masayoshi; Sato, Hideki

PATENT ASSIGNEE(S): Pioneer Corporation, Japan; Mitsubishi Chemical Corporation

SOURCE: PCT Int. Appl., 137 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

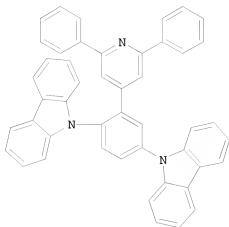
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006067976	A1	20060629	WO 2005-JP22635	20051209
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
JP 2006199679	A	20060803	JP 2005-355790	20051209
EP 1829871	A1	20070905	EP 2005-814748	20051209
R: DE				
PRIORITY APPLN. INFO.:			JP 2004-373981	A 20041224
			WO 2005-JP22635	W 20051209
OTHER SOURCE(S):		CASREACT 145:103546; MARPAT 145:103546		
GI				





III

AB Organic compds. represented by the following formula [I; Cz1, Cz2 = carbazolyl; Z = a direct bond or any connecting group which enables the nitrogen atom of the carbazole ring in Cz1 to be conjugated with the nitrogen atom of the carbazole ring in Cz2; Q = a direct bond connected to G in the following formula Q1; ring B1 = a 6-membered aromatic heterocycle having n nitrogen atom(s) as a heteroatom, provided that n is an integer of 1-3; G is connected to Q, it is a direct bond or any connecting group which each is connected to Q; G is bonded to any of the carbon atoms located in the ortho and para positions to a nitrogen atom of the ring B1; when G is not connected to Q, it is an aromatic hydrocarbon group; m = an integer of 3-5] are prepared. These compds. combines excellent hole-transporting properties with excellent electron-transporting properties and has excellent long-term resistance to elec. oxidation/reduction and a high triplet excitation level. A charge-transporting material and an organic electroluminescent element which comprise or employ the organic compound I are also disclosed. Thus, aldol condensation of 2,5-difluorobenzaldehyde with acetophenone in a mixture of concentrated H2SO4

and

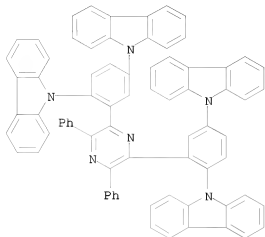
THF at 35° for 7 h gave 1-phenyl-3-(2,5-difluorophenyl)-2-propen-1-one which underwent cyclocondensation with 1-phenacylpyridinium bromide and ammonium acetate in a mixture of AcOH and DMF under refluxing for 6 h to give 4-(2,5-difluorophenyl)-2,6-diphenylpyridine (II). Carbazole was treated with NaH in DMF at 80° for 60 min and condensed with II under refluxing for 3 h to give 4-[2,5-bis(carbazol-9-yl)phenyl]-2,6-diphenylpyridine (III). An electroluminescent device with a luminescent layer comprising III as a main component (host material) showed excellent life property (working life of 1.00 at 2.500 cd/m2).

IT 895146-93-7P 895146-95-9P 895146-98-2P  
895147-00-9P 895147-29-2P 895147-31-6P  
895147-33-8P

RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation of biscarbazole derivs. as charge-transporting materials, and organic electroluminescent elements)

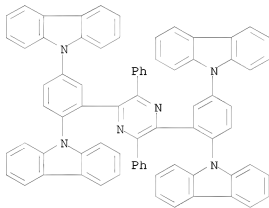
RN 895146-93-7 CAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-[(3,5-diphenyl-2,6-pyrazinediyl)di-2,1,4-benzenetriyl]tetrakis- (9CI) (CA INDEX NAME)



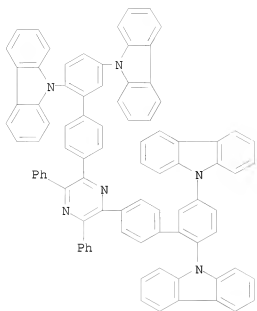
RN 895146-95-9 CAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-[(3,6-diphenyl-2,5-pyrazinediyl)di-2,1,4-benzenetriyl]tetrakis- (9CI) (CA INDEX NAME)

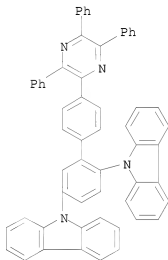


RN 895146-98-2 CAPLUS

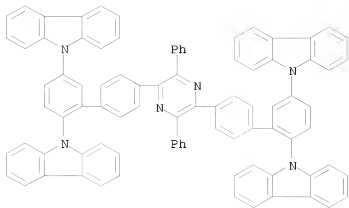
CN 9H-Carbazole, 9,9',9'',9'''-[(3,5-diphenyl-2,6-pyrazinediyl)bis([1,1'-biphenyl]-4',2,5-triyl)]tetrakis- (9CI) (CA INDEX NAME)



RN 895147-00-9 CAPLUS  
 CN 9H-Carbazole, 9,9'-[4'-(triphenylpyrazinyl)]-2,5-diylbis-  
 (9CI) (CA INDEX NAME)

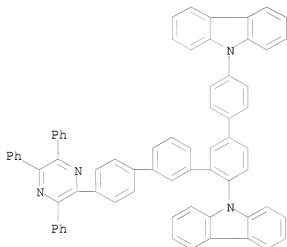


RN 895147-29-2 CAPLUS  
 CN 9H-Carbazole, 9,9',9'',9'''-[(3,6-diphenyl-2,5-pyrazinediyl)bis([1,1'-  
 biphenyl]-4',2,5-triyl)]tetrakis- (9CI) (CA INDEX NAME)



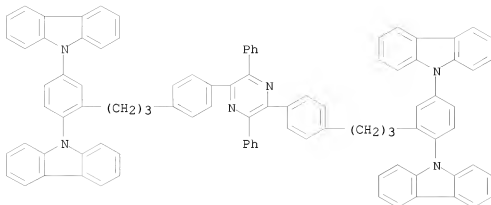
RN 895147-31-6 CAPLUS

CN 9H-Carbazole, 9,9'-[4''-(triphenylpyrazinyl)]bis- (9CI) (CA INDEX NAME)



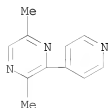
RN 895147-33-8 CAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-[(3,6-diphenyl-2,5-pyrazinediyl)bis(4,1-phenylene-3,1-propanediyl-2,1,4-benzenetriyl)]tetrakis- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 33 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:546033 CAPLUS  
 DOCUMENT NUMBER: 145:188688  
 TITLE: A highly active catalyst for Suzuki-Miyaura cross-coupling reactions of heteroaryl compounds  
 AUTHOR(S): Billingsley, Kelvin L.; Anderson, Kevin W.; Buchwald, Stephen L.  
 CORPORATE SOURCE: Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA  
 SOURCE: Angewandte Chemie, International Edition (2006), 45(21), 3484-3488  
 CODEN: ACIEF5; ISSN: 1433-7851  
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 145:188688  
 AB Catalysts derived from Pd and bulky dialkylphosphinobiaryl ligands are shown to be highly stable and active in Suzuki-Miyaura reactions of heteroaryl halides and heteroaryl boronic acids/esters (e.g., 3- or 4-pyridine, indole, and N-protected pyrrole derivs.). Furthermore, this catalyst system is not inhibited by the presence of highly basic aminopyridines or aminopyrimidines.  
 IT 902745-41-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (a highly active catalyst for Suzuki-Miyaura cross-coupling reactions of heteroaryl compds.)  
 RN 902745-41-9 CAPLUS  
 CN Pyrazine, 2,5-dimethyl-3-(4-pyridinyl)- (CA INDEX NAME)



REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS

L14 ANSWER 34 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:476931 CAPLUS

DOCUMENT NUMBER: 145:155575

TITLE: High-performance organic red-light-emitting devices based on a greenish-yellow-light-emitting host and long-wavelength emitting dopant

AUTHOR(S): Chew, Siewling; Wang, Pengfei; Hong, Zirou; Tao, Silu; Tang, Jianxin; Lee, Chun Sing; Wong, Ning Bew; Kwong, Hoilun; Lee, Shuit-Tong

CORPORATE SOURCE: Center of Super-Diamond and Advanced Films (COSDAF), Department of Physics and Materials Science, City University of Hong Kong, Hong Kong SAR, Peop. Rep. China

SOURCE: Applied Physics Letters (2006), 88(18), 183504/1-183504/3

CODEN: APPLAB; ISSN: 0003-6951

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

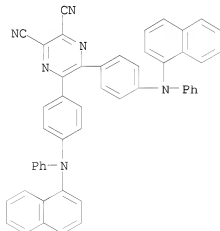
AB The authors demonstrated an organic red-light-emitting device (ORLED) using a host, 5,6-bis-[4-(naphthalene-1-yl-phenyl-amino)-phenyl]-pyrazine-2,3-dicarbonitrile (BNPPDC), and a dopant, 2,3-bis[[(2-hydroxy-4-diethylamino)phenyl](methylene)amino]-2-butanedinitrile (BDPMB). The device achieved a brightness of 9730 cd/m<sup>2</sup> at a 11 V, a power efficiency of 2.35lm/W, a current efficiency of 3.36 cd/A at 4.5 V, and a low turn-on voltage of 3.0 V, with nearly saturated red emission. The device is superior or equal to the best fluorescent ORLEDs reported. BNPPDC generally induced a significant blueshift in dopant emission, thus it may serve as a host for dopants emitting at long wavelengths in ORLEDs with improved performance.

IT 898546-75-3

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(high-performance organic red LEDs based on greenish-yellow-light-emitting host and long-wavelength emitting dopant)

RN 898546-75-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1-naphthalenylphenylamino)phenyl]-  
(CA INDEX NAME)



REFERENCE COUNT:

26

THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 35 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:465328 CAPLUS

DOCUMENT NUMBER: 144:488678

TITLE: Preparation of pyrazolylmethyl heteroaryl derivatives as modulators of GABAA receptors for treating CNS disorders

INVENTOR(S): Xu, Yuelian; Xie, Linghong; Gao, Yang; Han, Bingsong; Maynard, George, D.; Chenard, Bertrand, L.; Lan, Jiong

PATENT ASSIGNEE(S): Neurogen Corporation, USA

SOURCE: PCT Int. Appl., 100 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

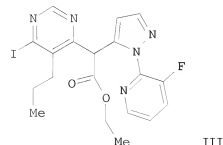
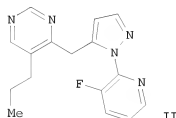
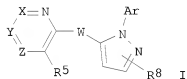
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006052546	A2	20060518	WO 2005-US39488	20051101
WO 2006052546	A3	20060720		
<p>W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW</p> <p>RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM</p>				
EP 1807417	A2	20070718	EP 2005-825135	20051101
<p>R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR</p>				
PRIORITY APPLN. INFO.:			US 2004-625313P	P 20041104
			WO 2005-US39488	W 20051101

OTHER SOURCE(S):

MARPAT 144:488678

GI

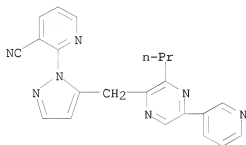


AB Compds. of Formula I (wherein W = CR<sub>6</sub>R<sub>7</sub> or O; X = N, NO or CR<sub>1</sub>; Y = N, NO or CR<sub>2</sub>; Z = N, NO or CR<sub>3</sub>; R<sub>1</sub> = R<sub>c</sub>; R<sub>2</sub> and R<sub>3</sub> = R<sub>c</sub> or form part of a fused heteroaryl ring; R<sub>5</sub> = H, halogen, CN, C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>alkenyl, etc.; R<sub>6</sub> and R<sub>7</sub> = H, Me, Et, or halogen; R<sub>8</sub> = 0-3 substituents; R<sub>c</sub> = H, halogen, NO<sub>2</sub>, CN, C<sub>1</sub>-C<sub>8</sub>alkylene-based group, etc.). Such compds. may be used to modulate ligand binding to GABAA receptors in vivo or in vitro, and are particularly useful in the treatment of a variety of central nervous system (CNS) disorders in humans, domesticated companion animals and livestock animals. Compds. provided herein may be administered alone or in combination with one or more other CNS agents to potentiate the effects of the other CNS agent(s). Pharmaceutical compns. and methods for treating such disorders are provided, as are methods for using such ligands for detecting GABAA receptors (e.g., receptor localization studies). For example, II was prepared by reacting 4,6-diiodo-5-propylpyrimidine and [2-(3-fluoropyridin-2-yl)-2H-pyrazol-3-yl]acetic acid Et ester to give III, which was subsequently reduced, hydrolyzed, and decarboxylated to give II. All compds. prepared and tested exhibited K<sub>i</sub> values of < 1 micromolar in an assay of GABAA receptor binding in rat cortical membranes.

II 887266-32-2P, 2-[5-[[3-Propyl-5-(pyridin-3-yl)pyrazin-2-yl]methyl]-1H-pyrazol-1-yl]nicotinonitrile  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (drug candidate; preparation of pyrazolylmethyl heteroaryl derivs. as modulators of GABAA receptors for treating CNS disorders)

RN 887266-32-2 CAPLUS

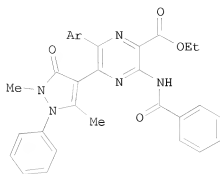
CN 3-Pyridinecarbonitrile, 2-[5-[[3-propyl-5-(3-pyridinyl)pyrazinyl]methyl]-1H-pyrazol-1-yl]- (9CI) (CA INDEX NAME)



L14 ANSWER 36 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:408571 CAPLUS  
 DOCUMENT NUMBER: 145:249171  
 TITLE: Synthesis and antiviral activity of 2-amino-3-ethoxycarbonylpyrazine derivatives  
 AUTHOR(S): Rusinov, V. L.; Kovalev, I. S.; Kozhevnikov, D. N.; Ustinova, M. M.; Chupakhin, O. N.; Pokrovskii, A. G.; Ilicheva, T. N.; Balanov, E. F.; Bormotov, N. I.; Serova, O. A.; Volkov, G. N.  
 CORPORATE SOURCE: Ural State Technical University, Yekaterinburg, 620002, Russia  
 SOURCE: Pharmaceutical Chemistry Journal (2005), 39(12), 630-635  
 CODEN: PCJOAU; ISSN: 0091-150X  
 PUBLISHER: Springer  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 145:249171



GI



I

AB A series of substituted 2-amino-3-ethoxycarbonylpyrazines containing indole, resorcinol, thiophenol, Et cyanoacetate, indandione, and antipyrine moieties, e.g., I (Ar = Ph, 4-Me-Ph, 4-F-Ph or 4-Cl-Ph), was obtained via reactions of nucleophilic substitution of hydrogen in the initial 2-aminopyrazine-1-oxides. Some of the synthesized compds. inhibited the reproduction of measles viruses and exhibited a weak antiviral activity against the Marburg virus. However, most of the new substituted pyrazines were not cytotoxic and exhibited no activity against ortho-poxviruses and measles viruses.

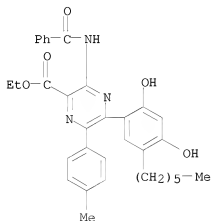
IT 489412-04-6P 489417-49-4P 906090-04-8P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(preparation and antiviral activity of substituted (aryl)pyrazine derivs. via nucleophilic substitution of hydrogen in amino(ethoxycarbonyl)pyrazine-N-oxides with resorcinols or their ethers in presence of benzoyl or acetyl chloride)

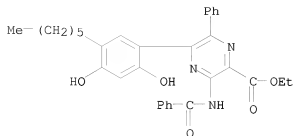
RN 489412-04-6 CAPLUS

CN Pyrazinecarboxylic acid, 3-(benzoylamino)-5-(5-hexyl-2,4-dihydroxyphenyl)-6-(4-methylphenyl)-, ethyl ester (9CI) (CA INDEX NAME)



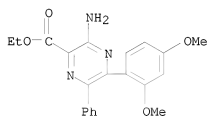
RN 489417-49-4 CAPLUS

CN Pyrazinecarboxylic acid, 3-(benzoylamino)-5-(5-hexyl-2,4-dihydroxyphenyl)-6-phenyl-, ethyl ester (9CI) (CA INDEX NAME)



RN 906090-04-8 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-5-(2,4-dimethoxyphenyl)-6-phenyl-, ethyl ester (9CI) (CA INDEX NAME)



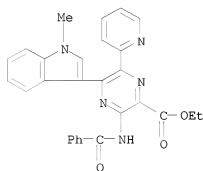
IT 695219-42-2P 906089-66-5P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(preparation and antiviral activity of substituted (indolyl)pyrazine derivs. via nucleophilic substitution of hydrogen in amino(ethoxycarbonyl)pyrazine-N-oxides with indoles in presence of benzoyl chloride or acetic anhydride)

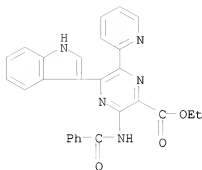
RN 695219-42-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-(benzoylamino)-5-(1-methyl-1H-indol-3-yl)-6-(2-pyridinyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 906089-66-5 CAPLUS

CN Pyrazinecarboxylic acid, 3-(benzoylamino)-5-(1H-indol-3-yl)-6-(2-pyridinyl)-, ethyl ester (9CI) (CA INDEX NAME)



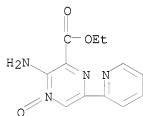
IT 906090-43-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation and antiviral activity of substituted (indolyl)pyrazine derivs. via nucleophilic substitution of hydrogen in amino(ethoxycarbonyl)pyrazine-N-oxides with indoles in presence of benzoyl chloride or acetic anhydride)

RN 906090-43-5 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(2-pyridinyl)-, ethyl ester, 4-oxide (9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 37 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:196490 CAPLUS

DOCUMENT NUMBER: 144:412459

TITLE: Synthesis of amino- and bis(bromomethyl)-substituted bi- and tetradentate N-heteroaromatic ligands: building blocks for pyrazino-functionalized fullerene dyads

AUTHOR(S): Kleineweischede, Andreas; Mattay, Jochen  
CORPORATE SOURCE: Organische Chemie I, Fakultät fuer Chemie, Universitaet Bielefeld, Bielefeld, 33501, Germany  
SOURCE: European Journal of Organic Chemistry (2006), (4), 947-957

PUBLISHER: CODEN: EJOCFK; ISSN: 1434-193X  
Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 144:412459

AB The synthesis of amino- and bis(bromomethyl)-substituted phenanthrolines, pyrazino[2,3-f]phenanthrolines, dipyrido[3,2-a:2',3'-c]phenazines, pyrazino[2,3-i]dipyrido[3,2-a:2',3'-c]phenazines, 2,3-bis(2-pyridyl)pyrazines, 2,3-bis(2-pyridyl)quinoxalines and 7,8-bis(2-pyridyl)pyrazino[2,3-g]quinoxalines is reported. These substituted bi- and tetradentate N-heteroarom. ligands are potential synthons for the

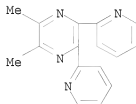
preparation of fullerene ligands. The diketones, 1,10-phenanthroline-5,6-dione, 2,2'-pyridil, and 1,4-dibromo-2,3-butanedione were used as starting materials.

IT 89684-66-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of amino- and bis(bromomethyl)-substituted bi- and tetradentate N-heteroarom. ligands as building blocks for pyrazino-functionalized fullerene dyads)

RN 89684-66-2 CAPLUS

CN Pyrazine, 2,3-dimethyl-5,6-di-2-pyridinyl- (9CI) (CA INDEX NAME)

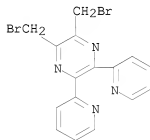


IT 883875-23-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of amino- and bis(bromomethyl)-substituted bi- and tetradentate N-heteroarom. ligands as building blocks for pyrazino-functionalized fullerene dyads)

RN 883875-23-8 CAPLUS

CN Pyrazine, 2,3-bis(bromomethyl)-5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 38 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:85560 CAPLUS

DOCUMENT NUMBER: 144:312128

TITLE: Ir-catalyzed borylation of C-H bonds in N-containing heterocycles: Regioselectivity in the synthesis of heteroaryl boronate esters

AUTHOR(S): Mkhaliid, Ibraheem A. I.; Coventry, David N.; Albesa-Jove, David; Batsanov, Andrei S.; Howard, Judith A. K.; Perutz, Robin N.; Marder, Todd B.  
CORPORATE SOURCE: Department of Chemistry, University of Durham, Durham, DH1 3LE, UK

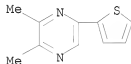
SOURCE: Angewandte Chemie, International Edition (2006), 45(3), 489-491

CODEN: ACIEF5; ISSN: 1433-7851

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

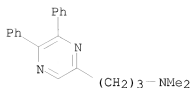
DOCUMENT TYPE: Journal

LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 144:312128  
 AB Boronation and Suzuki subsequent arylation of 4,4'-disubstituted 2,2'-bipyridines was achieved by reaction with bis-pinacolato diboron catalyzed [Ir(cod)(μ-OMe)]<sub>2</sub>. Reaction of 4,4'-di-tert-butyl-2,2'-bipyridine with B<sub>2</sub>pin<sub>2</sub> catalyzed by 5 mol% of [Ir(cod)(μ-OMe)]<sub>2</sub> gave 6,6'-R<sup>2</sup>-4,4'-tBu<sub>2</sub>-2,2'-bipyridine (2a, R = 4,4,5,5-Me<sub>4</sub>-1,3,2-dioxaborolan-2-yl). Suzuki coupling of 2 with PhI gave 6,6'-Ph<sub>2</sub>-4,4'-tBu<sub>2</sub>-2,2'-bipyridine (3a) and monosubstituted product 6-Ph-4,4'-tBu<sub>2</sub>-2,2'-bipyridine (4a). The same procedure applied to 4,4'-(MeO)<sub>2</sub>-2,2'-bipyridine afforded 5,5'-R<sup>2</sup>-4,4'-tBu<sub>2</sub>-2,2'-bipyridine (2b). Crystal structures of 3a and 2b are reported.  
 IT 77390-03-5P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (crystal structure; preparation of boronated and arylated bipyridines and pyrazines by iridium-catalyzed boration with pinacoldiborane and Suzuki coupling)  
 RN 77390-03-5 CAPLUS  
 CN Pyrazine, 2,3-dimethyl-5-(2-thienyl)- (9CI) (CA INDEX NAME)

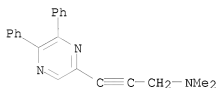


REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 39 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:1263584 CAPLUS  
 DOCUMENT NUMBER: 144:150331  
 TITLE: New calcineurin inhibiting 3-dimethylaminopropyl substituted diarylheterocycles by Sonogashira reactions and catalytic hydrogenation  
 AUTHOR(S): Yin, Lunxiang; Erdmann, Frank; Liebscher, Juergen  
 CORPORATE SOURCE: Department of Chemistry, Humboldt University Berlin, Berlin, 12489, Germany  
 SOURCE: Journal of Heterocyclic Chemistry (2005), 42(7), 1369-1379  
 CODEN: JHTCAD; ISSN: 0022-152X  
 PUBLISHER: HeteroCorporation  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 144:150331  
 AB A series of calcineurin-inhibiting compds. consisting of a central aromatic N-heterocycle, two aryl substituents and a 3-(dimethylamino)propyl chain was synthesized by introduction of the side chain. A corresponding haloheterocyclic compound was transformed into a 3-(dimethylamino)propynyl heterocyclic compound by Sonogashira coupling and was in turn hydrogenated in the presence of Pd/C to afford the 3-(dimethylamino)propyl-substituted target compds. Some of the products showed calcineurin inhibiting activity.  
 IT 873914-04-6P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation) (preparation of (dimethylamino)propyl-substituted diaryl heterocyclic compds. with calcineurin inhibiting activity)  
 RN 873914-04-6 CAPLUS  
 CN Pyrazinepropanamine, N,N-dimethyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



IT 873913-94-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation of (dimethylamino)propyl-substituted diaryl heterocyclic  
 compds. with calcineurin inhibiting activity)  
 RN 873913-94-1 CAPLUS  
 CN 2-Propyn-1-amine, 3-(5,6-diphenylpyrazinyl)-N,N-dimethyl- (9CI) (CA INDEX  
 NAME)



REFERENCE COUNT: 64 THERE ARE 64 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

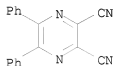
L14 ANSWER 40 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:1253090 CAPLUS  
 DOCUMENT NUMBER: 143:471970  
 TITLE: Cobalt octasulfooctaphenyltetrapyrazinoporphyrazine  
 INVENTOR(S): Shishkin, V. N.; Kudrik, E. V.; Shaposhnikov, G. P.;  
 Makarov, S. V.  
 PATENT ASSIGNEE(S): Gosudarstvennoe Obrazovatel'noe Uchrezhdenie Vyshego  
 Professional'nogo Obrazovaniya "Ivanovskii Gos.  
 Khim.-Tekhnol. Univ.", Russia  
 SOURCE: Russ., 6 pp.  
 CODEN: RUXXE7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Russian  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2265026	C1	20051127	RU 2004-121447	20040713
PRIORITY APPLN. INFO.:			RU 2004-121447	20040713

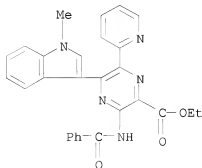
AB The invention relates to preparing tetrapyrazinoporphyrazine derivs. namely,  
 to CoL (I; H2L = octasulfooctaphenyltetrapyrazinoporphyrazine) that can be  
 used as a catalyst in oxidation reactions of S-containing compds., in  
 particular,  
 cysteine and thioureas, and diethylamine also being both in acid and  
 neutral media. I was prepared by the reaction of diaminomaleodinitrile with  
 benzil, followed by cyclocondensation in presence of Co(OAc)2 and  
 subsequent sulfonylation. I was used as an oxidation catalyst of cysteine,  
 thioureas and Et2NH.

IT 52197-23-6P, 5,6-Diphenyl-2,3-dicyanopyrazine  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

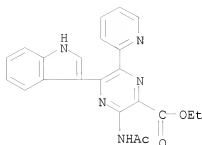
(Reactant or reagent)  
 (preparation and reactant for preparation of cobalt  
 octasulfoctaphenyltetrapyrroz  
 inoporphyrazine)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 41 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:1236026 CAPLUS  
 DOCUMENT NUMBER: 145:188335  
 TITLE: Analysis of electronic transitions during  
 photoluminescence for some indolylpyrazines  
 AUTHOR(S): Tarkhov, L. I.; Potemkin, V. A.; Kovalev, I. S.;  
 Shul'gin, B. V.  
 CORPORATE SOURCE: Ural. Gos. Tekh. Univ., Yekaterinburg, Russia  
 SOURCE: Materialovedenie (2005), (10), 18-21  
 CODEN: MATEC5; ISSN: 1684-579X  
 PUBLISHER: OOO Nauka i Tekhnologii  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB Earlier theor. results for the wavelength and assignment of  
 photoluminescence transitions of indolylpyrazines are discussed. The most  
 commonly encountered transition is from the 5th virtual orbital to the  
 1st. Electron d. shifts from pyrazine ring to the indole group upon  
 electronic excitation.  
 IT 695219-42-2, IK 107 875932-62-0, UM32  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP  
 (Physical process); PROC (Process)  
 (anal. of electronic transitions during photoluminescence of some  
 indolylpyrazines)  
 RN 695219-42-2 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-(benzoylamino)-5-(1-methyl-1H-indol-3-yl)-6-(2-  
 pyridinyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 875932-62-0 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-(acetylamino)-5-(1H-indol-3-yl)-6-(2-pyridinyl)-  
 , ethyl ester (9CI) (CA INDEX NAME)



L14 ANSWER 42 OF 399 CAPLUS COPYRIGHT 2007 ACS on SIN

ACCESSION NUMBER: 2005:1225418 CAPLUS

DOCUMENT NUMBER: 144:141227

TITLE: Tetra-2,3-pyrazinoporphyrazines with Externally Appended Pyridine Rings. 4. UV-Visible Spectral and Electrochemical Evidence of the Remarkable Electron-Deficient Properties of the New Tetrakis-2,3-[5,6-di(2-(N-methylpyridiniumyl)pyrazino]porphyrinatometal Octacations, [(2-Mepy)8TPyzPzM]8+ (M = MgII(H2O), CoII, CuII, ZnII)

AUTHOR(S): Bergami, Costanza; Donzello, Maria Pia; Monacelli, Fabrizio; Ercolani, Claudio; Kadish, Karl M.

CORPORATE SOURCE: Dipartimento di Chimica, Università degli Studi di Roma La Sapienza, Rome, I-00185, Italy

SOURCE: Inorganic Chemistry (2005), 44(26), 9862-9873

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 144:141227

AB Metal derivs. of the octacationic tetrakis-2,3-[5,6-di(2-(N-methylpyridiniumyl)pyrazino]porphyrazine macrocycle [(2-Mepy)8TPyzPzH2]8+ (2-Mepy = 2-(N-methylpyridiniumyl ring) isolated as water-soluble hydrated iodide salts [(2-Mepy)8TPyzPzM](I8)·xH2O, (M = MgII(H2O), CoII, CuII, ZnII; x = 2-5) were prepared from the corresponding neutral complexes [Py8TPyzPzM]·xH2O previously reported. Reaction of these complexes with CH3I in DMF under mild conditions led to full quaternization of all eight pyridine N atoms and formation of the octacations [(2-Mepy)8TPyzPzM]8+. Clathrated H2O mols. could be eliminated from [(2-Mepy)8TPyzPzM](I8)·xH2O by mild heating (≤100°) under vacuum, but the unsolvated species which were formed tended to rehydrate when exposed to air. Magnetic susceptibility measurements and EPR spectra prove that the CuII and CoII complexes in the solid state are both paramagnetic with one unpaired electron, thus giving a low-spin state CoII for the latter compound. Studies of the charged species [(2-Mepy)8TPyzPzM]8+ in aqueous media at .apprx.10<sup>-5</sup> M concentration provide

evidence for the occurrence of mol. aggregation, similar to what is seen for the related free-base species [(2-Mepy)8TPyzPzH2]8+ (see part 3 of this series, preceding paper in this issue), but the formation of monomeric species is generally favored upon dilution of the solns. The same octacations are essentially monomeric in solns. of pyridine or DMSO, but traces of aggregation, if occasionally present, vanish with the time. Changes in the UV-visible spectra are observed in the Q- and B-band regions as a result of the quaternization at the pyridine N atoms. Cyclic voltammetry and thin-layer spectroelectrochem. data in DMSO show well-resolved reversible multistep 1-electron redns. for both the



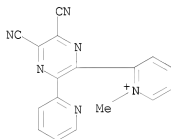
unmethylated and methylated complexes, all of which appear to be ligand-centered, the only exception being reduction of the CoII complex. For this species, the 1st 1-electron reduction is a metal-centered CoII  $\rightarrow$  CoI process, but the site of electron transfer is reversed and the final product upon a further 1-electron reduction is formulated as a CoII dianion as opposed to a CoI  $\pi$ -anion radical. This sequence is similar to what was earlier reported for reduction of the same compound in pyridine. Reversible 1-electron oxidns. are also observed for the unmethylated species [Py8TPyzPzM]·xH<sub>2</sub>O where M = CoII and MnII in DMSO. Remarkably, the octacationic macrocycles [(2-Mepy)8TPyzPzM](18)·xH<sub>2</sub>O, (M = MgII(H<sub>2</sub>O), CoII, CuII, and ZnII; x = 2-5) are more easily reduced at any step of the reduction than the corresponding unquaternized species with the same metal ion. This indicates a higher tendency to stepwise electron uptake after the quaternization process, which enhances the charge redistribution capability within the species formed by the electroredn.

IT 873438-61-0 873438-63-2 873438-65-4

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)  
(cyclic voltammetry of)

RN 873438-61-0 CAPLUS

CN Pyridinium, 2-[5,6-dicyano-3-(2-pyridinyl)pyrazinyl]-1-methyl-, iodide (9CI) (CA INDEX NAME)



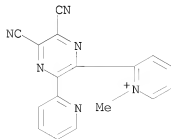
RN 873438-63-2 CAPLUS

CN Pyridinium, 2-[5,6-dicyano-3-(2-pyridinyl)pyrazinyl]-1-methyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 873438-62-1

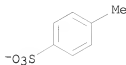
CMF C17 H11 N6



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



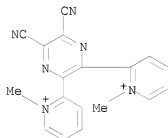
RN 873438-65-4 CAPLUS

CN Pyridinium, 2,2'-(5,6-dicyano-2,3-pyrazinediyl)bis[1-methyl-, salt with 4-methylbenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 873438-64-3

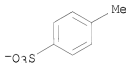
CMF C18 H14 N6



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 43 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1225417 CAPLUS

DOCUMENT NUMBER: 144:141226

TITLE: Tetra-2,3-pyrazinoporphyrazines with Externally Appended Pyridine Rings. 3. A New Highly Electron-Deficient Octacationic Macrocyclic: Tetrakis-2,3-[5,6-di{2-(N-methyl)pyridiniumyl}pyrazino]porphyrazine, [(2-Mepy)8TPyzPzH2]8+

AUTHOR(S): Bergami, Costanza; Donzello, Maria Pia; Ercolani, Claudio; Monacelli, Fabrizio; Kadish, Karl M.; Rizzoli, Corrado

CORPORATE SOURCE: Dipartimento di Chimica, Università degli Studi di Roma La Sapienza, Rome, I-00185, Italy

SOURCE: Inorganic Chemistry (2005), 44(26), 9852-9861  
CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

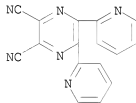
OTHER SOURCE(S): CASREACT 144:141226

AB A new octacationic macrocycle, tetrakis-2,3-[5,6-di(2-(N-methyl)pyridiniumyl)pyrazino]porphyrizine, was obtained in its hydrated form as the water-soluble iodide salt. This compound, abbreviated as [(2-Mepy)8TPyzPzH2](I8)·8H2O (2-Mepy = 2-(N-methyl)pyridiniumyl moiety), was obtained by demetalation of the corresponding MgII complex, [(2-Mepy)8TPyzPzMg(H2O)](I8)·5H2O, which in turn was prepared from its corresponding neutral hydrated species tetrakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrizinato(monoaquo)magnesium(II), [Py8TPyzPzMg(H2O)]·4H2O, by reaction with CH3I in DMF. The quaternization reactions by using CH3I or Me p-toluenesulfonate were also conducted on the monomeric precursor 2,3-dicyano-5,6-di(2-pyridyl)-1,4-pyrazine, [(CN)2Py2Pz], with formation of the monoquaternized ion [(CN)2Py(2-Mepy)Pz]+ neutralized by iodide and p-toluenesulfonate anions. Single-crystal x-ray work allowed elucidation of the structure of the two salt-like species. The diquaternized ion [(CN)2(2-Mepy)2Pz]2+ could also be obtained as a p-toluenesulfonate salt, but attempts at direct macrocyclization of this dicationic species were unsuccessful. The iodide salt [(2-Mepy)8TPyzPzH2](I8)·8H2O is water-soluble, with different solubilities depending on the range of pH explored. The macrocycle [(2-Mepy)8TPyzPzH2]8+ undergoes facile deprotonation and behaves as a strong acid. Aggregation phenomena are observed for both the octacation [(2-Mepy)8TPyzPzH2]8+ and its corresponding centrally deprotonated species [(2-Mepy)8TPyzPz]6+. Nevertheless, both cationic moieties exist in their monomeric form under specific exptl. conditions. UV-visible monitored titrns. with NaOH provide information about the type of protonation/deprotonation equilibrium which are complicated by the occurrence of aggregation phenomena.

IT 118553-90-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(for preparation of monoquaternized N-methyl-dicyano-5,6-di(2-pyridyl)-1,4-pyrazine)

RN 118553-90-5 CAPLUS

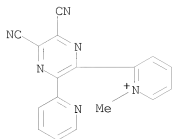
CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



IT 873438-61-0P 873438-63-2P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and crystal structure of)

RN 873438-61-0 CAPLUS

CN Pyridinium, 2-[5,6-dicyano-3-(2-pyridinyl)pyrazinyl]-1-methyl-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

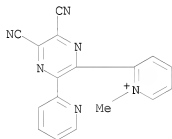
RN 873438-63-2 CAPLUS

CN Pyridinium, 2-[5,6-dicyano-3-(2-pyridinyl)pyrazinyl]-1-methyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 873438-62-1

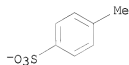
CMF C17 H11 N6



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



IT 873438-91-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 873438-91-6 CAPLUS

CN Pyridinium, 2,2'-(5,6-dicyano-2,3-pyrazinediyl)bis[1-methyl-, salt with 4-methylbenzenesulfonic acid (1:2), tetrahydrate (9CI) (CA INDEX NAME)

CM 1

PATENT NO.			KIND	DATE	APPLICATION NO.			DATE								
WO 2005095384			A1	20051013	WO 2005-JP5663			20050322								
W:	AE,	AG,	AL,	AM,	AT,	AU,	AZ,	BA,	BB,	BG,	BR,	BW,	BY,	BZ,	CA,	CH,
	CN,	CO,	CR,	CU,	CZ,	DE,	DK,	DM,	DZ,	EC,	EE,	EG,	ES,	FI,	GB,	GD,
	GE,	GH,	GM,	HR,	HU,	ID,	IL,	IN,	IS,	JP,	KE,	KG,	KP,	KR,	KZ,	LC,
	LK,	LR,	LS,	LT,	LU,	LV,	MA,	MD,	MG,	MK,	MN,	MW,	MX,	MZ,	NA,	NI,
	NO,	NZ,	OM,	PG,	PH,	PL,	PT,	RO,	RU,	SC,	SD,	SE,	SG,	SK,	SL,	SM,

SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,  
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,  
 MR, NE, SN, TD, TG

CA 2562126	A1	20051013	CA 2005-2562126	20050322
EP 1737841	A1	20070103	EP 2005-721590	20050322
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
CN 1938296	A	20070328	CN 2005-80010591	20050322
JP 2007530434	T	20071101	JP 2006-529402	20050322
IN 2006CN03609	A	20070615	IN 2006-CN3609	20060928
MX 2006PA11247	A	20061129	MX 2006-PA11247	20060929
KR 2007008674	A	20070117	KR 2006-722911	20061031
PRIORITY APPLN. INFO.:			AU 2004-901772	A 20040401
			WO 2005-JP5663	W 20050322

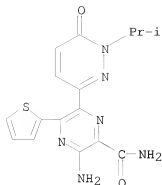
OTHER SOURCE(S): MARPAT 143:367331  
 GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to pyrazine derivs. of formula I, which are adenosine antagonists. In compds. I, R is H or (un)substituted lower alkyl; X is H, halo, OH, SH, cyano, acyl, (un)substituted lower alkyl, (un)substituted lower alkoxy, (un)substituted aryl, etc.; Y is H, halo, OH, SH, cyano, acyl, (un)substituted lower alkyl, (un)substituted lower alkoxy, (un)substituted lower alkylthio, (un)substituted amino, (un)substituted aryl, or (un)substituted heteroaryl; and Z is (un)substituted aryl or (un)substituted heteroaryl; or a salt thereof. The invention also relates to the preparation of I, pharmaceutical compns. containing I, or a pharmaceutically acceptable salt thereof, in admixt. with a pharmaceutically acceptable carrier, as well as to the use of the compns. in the treatment of disorders responding to adenosine antagonists. Oxidation of 2-isopropyl-6-(phenylethynyl)-3-pyridazinone (II) to the corresponding dione followed by condensation with 2,3-diamine-2-butenedinitrile resulted in the formation of pyridazinyipyrazine III, which underwent regioselective substitution with 4-methoxybenzylamine, debenzoylation, and hydrolysis to give pyrazinecarboxamide IV. The amide of IV was cleaved followed by decarboxylation, bromination with N-bromosuccinimide, and palladium-catalyzed coupling with 5-ethynyl-1-methyl-1H-imidazole to give pyrazinyipyridazinone V. The tested compds. express high affinity for adenosine receptors, with compound V expressing K<sub>i</sub> values of 0.72 nM and 0.25 nM for adenosine A<sub>1</sub> and A<sub>2a</sub> receptors, resp.

IT 866264-96-2P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridazinyl)-5-(2-thienyl)-2-pyrazinecarboxamide  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (drug candidate; preparation of pyrazine derivs. as adenosine antagonists)

RN 866264-96-2 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridazinyl]-5-(2-thienyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 45 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:1078246 CAPLUS  
 DOCUMENT NUMBER: 143:367330  
 TITLE: Pyrazine derivatives as adenosine antagonists, their preparation, pharmaceutical compositions, and use in therapy  
 INVENTOR(S): Tsutsumi, Hideo; Tabuchi, Seiichiro; Minagawa, Masatoshi; Akahane, Atsushi  
 PATENT ASSIGNEE(S): Fujisawa Pharmaceutical Co. Ltd., Japan  
 SOURCE: U.S. Pat. Appl. Publ., 54 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

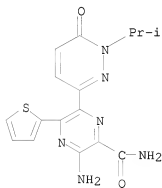
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005222159	A1	20051006	US 2005-87761	20050324
US 7265120	B2	20070904		
PRIORITY APPLN. INFO.:			AU 2004-901772	A 20040401
OTHER SOURCE(S):		MARPAT 143:367330		
GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to pyrazine derivs. of formula I, which are adenosine antagonists. In compds. I, R is H or (un)substituted lower alkyl; X is H, halo, OH, SH, cyano, acyl, (un)substituted lower alkyl, (un)substituted lower alkoxy, (un)substituted aryl, etc.; Y is H, halo, OH, SH, cyano, acyl, (un)substituted lower alkyl, (un)substituted lower alkoxy, (un)substituted lower alkylthio, (un)substituted amino, (un)substituted aryl, or (un)substituted heteroaryl; and Z is (un)substituted aryl or (un)substituted heteroaryl; or a salt thereof. The invention also relates to the preparation of I, pharmaceutical compns. containing I, or a pharmaceutically acceptable salt thereof, in admixt. with a pharmaceutically acceptable carrier, as well as to the use of the compns. in the treatment of disorders responding to adenosine antagonists. Oxidation of 2-isopropyl-6-(phenylethynyl)-3-pyridazinone (II) to the corresponding dione followed by condensation with 2,3-diamine-2-butenedinitrile resulted

in the formation of pyridazinylpyrazine III, which underwent regioselective substitution with 4-methoxybenzylamine, debenzoylation, and hydrolysis to give pyrazinecarboxamide IV. The amide of IV was cleaved followed by decarboxylation, bromination with N-bromosuccinimide, and palladium-catalyzed coupling with 5-ethynyl-1-methyl-1H-imidazole to give pyrazinylpyridazinone V. The tested compds. express high affinity for adenosine receptors, with compound V expressing Ki values of 0.72 nM and 0.25 nM for adenosine A1 and A2a receptors, resp.

IT 866264-96-2P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridazinyl)-5-(2-thienyl)-2-pyrazinecarboxamide  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (drug candidate; preparation of pyrazine derivs. as adenosine antagonists)  
 RN 866264-96-2 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridazinyl]-5-(2-thienyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 46 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1043744 CAPLUS

DOCUMENT NUMBER: 144:292236

TITLE: Synthesis and characterization of n-type materials for non-doped organic red-light-emitting diodes

AUTHOR(S): Chen, Shiyun; Xu, Xinjun; Liu, Yunqi; Yu, Gui; Sun, Xiaobo; Qiu, Wenfeng; Ma, Yongqiang; Zhu, Daoben

CORPORATE SOURCE: Key Laboratory of Organic Solids, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Advanced Functional Materials (2005), 15(9), 1541-1546  
 CODEN: AFMDC6; ISSN: 1616-301X

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 144:292236

AB Two compds., 2,3-dicyano-5,6-di(4'-diphenylamino-biphenyl-4-yl)pyrazine (CAPP) and 6,7-dicyano-2,3-di(4'-diphenylamino-biphenyl-4-yl)quinoxaline (CAPQ), capable of intramol. charge transfer, have been designed and synthesized in high yield by a convenient procedure. The compds. have been fully characterized spectroscopically. They have a high thermal stability and show bright light emission both in non-polar solvents and in the solid state. Moreover, they exhibit excellent reversible oxidation and reduction waves. The higher energy level of the HOMO (-5.3 eV) and the triphenylamine group are advantageous for hole-injection/transport. In addition, the high electron affinities of 3.4 eV and the observed reversible reductive process suggest that these compds. enhance electron injection



and have potential for use in electron transport. Three types of non-doped red-light-emitting diodes have been studied using CAPP and CAPQ as the electron-transporting and host-light-emitting layers, resp. The devices exhibit red electroluminescence (EL), and constant Commission Internationale de l'Eclairage coordinates have been observed on increasing the c.d. Pure red EL of CAPP, with a maximum brightness of 536 cd m<sup>-2</sup> and an external quantum efficiency of 0.7 % in ambient air, was achieved.

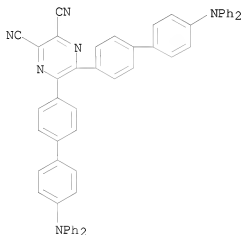
IT 878393-95-4P

RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)

(preparation and characterization of n-type materials for non-doped organic red-light-emitting diodes)

RN 878393-95-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



REFERENCE COUNT: 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 47 OF 399 CAPLUS COPYRIGHT 2007 ACS on SIN

ACCESSION NUMBER: 2005:1032345 CAPLUS

DOCUMENT NUMBER: 145:27964

TITLE: Synthesis and some properties of 5,6-(4,4'-dimethylaminophenyl)-2,3-dicyanopyrazine and its porphyrazine derivative

AUTHOR(S): Shishkin, V. N.; Kudrik, E. V.; Shaposhnikov, G. P.

CORPORATE SOURCE: Ivanov. Gos. Khim.-Tekhnol. Univ., Ivanovo, Russia

SOURCE: Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i

Khimicheskaya Tekhnologiya (2004), 47(10), 14-17

CODEN: IVUKAR; ISSN: 0579-2991

PUBLISHER: Ivanovskii Gosudarstvennyi Khimiko-Tekhnologicheskii Universitet

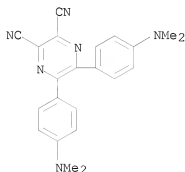
DOCUMENT TYPE: Journal

LANGUAGE: Russian

OTHER SOURCE(S): CASREACT 145:27964

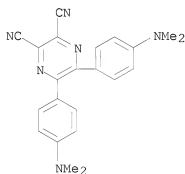
AB The 5,6-(4,4'-dimethylaminophenyl)-2,3-dicyanopyrazine was synthesized in 47% yield by cyclocondensation of diaminomaleonitrile with 4,4'-bis(dimethylamino)benzil. Subsequent Mg-mediated cyclotetramerization of this pyrazine afforded the corresponding porphyrazine in 16% yield. The optical properties and amino-imino tautomerism of the products have been studied.

IT 888947-52-2P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (bis(quinoneiminium) tautomer; preparation, optical properties and  
 tautomerism of bis(dimethylaminophenyl)dicyanopyrazine and its  
 porphyrazine derivative)  
 RN 888947-52-2 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dimethylamino)phenyl]-,  
 di(hydrochloride-d) (9CI) (CA INDEX NAME)



● 2 DC1

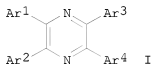
IT 888947-50-0P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (preparation, optical properties and tautomerism of  
 bis(dimethylaminophenyl)dicyanopyrazine and its porphyrazine derivative)  
 RN 888947-50-0 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dimethylamino)phenyl]- (CA INDEX  
 NAME)



L14 ANSWER 48 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:983066 CAPLUS  
 DOCUMENT NUMBER: 143:275313  
 TITLE: Electron transport material for organic  
 electroluminescent device  
 INVENTOR(S): Yabe, Masayoshi; Fugono, Masayo  
 PATENT ASSIGNEE(S): Mitsubishi Chemical Corp., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 37 pp.

DOCUMENT TYPE: CODEN: JKXXAF  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: 1 Japanese  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005243266	A	20050908	JP 2004-47707	20040224
PRIORITY APPLN. INFO.: OTHER SOURCE(S): GI	MARPAT	143:275313	JP 2004-47707	20040224

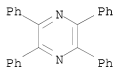


AB The invention relates to an electron transport material for an organic electroluminescent device, providing good electron injection, transporting and hole blocking characteristics as well as an excellent redox stabilities, represented by I [Ar1-4 = aromatic hydrocarbon or aromatic heterocyclic group represented by II [A = aromatic hydrocarbon or aromatic heterocyclic ring; X and Z = -CR1=, -NR2-, -O-, and -S- [R1 and R2 = H, or substituted group]; Y = C or N]].

IT 642-04-6P  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (electron transport material for organic electroluminescent device)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 49 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:962046 CAPLUS

DOCUMENT NUMBER: 143:266952

TITLE: Preparation of bipyridyl amides as modulators of metabotropic glutamate receptor-5

INVENTOR(S): Bonnefous, Celine; Kamenecka, Theodore M.; Vernier, Jean-Michel

PATENT ASSIGNEE(S): Merck & Co., Inc., USA

SOURCE: PCT Int. Appl., 79 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

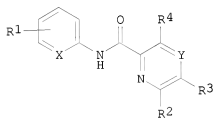
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

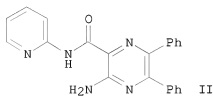
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2005079802	A1	20050901	WO 2005-US3952	20050209
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2005215379	A1	20050901	AU 2005-215379	20050209
CA 2555402	A1	20050901	CA 2005-2555402	20050209
EP 1715867	A1	20061102	EP 2005-713111	20050209
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS			
CN 1933838	A	20070321	CN 2005-80004732	20050209
JP 2007524682	T	20070830	JP 2006-553189	20050209
IN 2006DN04346	A	20070713	IN 2006-DN4346	20060727
US 2007149547	A1	20070628	US 2006-589407	20060811
PRIORITY APPLN. INFO.:			US 2004-544627P	P 20040212
			WO 2005-US3952	W 20050209
OTHER SOURCE(S):		CASREACT 143:266952; MARPAT 143:266952		
GI				



I



II

AB The title compds. I [X = N, C; Y = N, C, C(halo); R1 = H, alkyl, cycloalkyl, etc.; R2 = H, alkyl, aryl, etc.; R3 = aryl, halo, alkyl, etc.; R2 and R3 may be joined together with the atoms to which they are attached to form a (un)saturated 4-7 membered ring containing 0-2 heteroatoms selected from

O, S and N; R4 = aryl, heteroaryl, halo, etc.] which are mGluR5 modulators useful in the treatment or prevention of diseases and conditions in which mGluR5 is involved, including but not limited to psychiatric and mood disorders such as schizophrenia, anxiety, depression, bipolar disorders, and panic, as well as in the treatment of pain, Parkinson's disease, cognitive dysfunction, epilepsy, circadian rhythm and sleep disorders, such as shift-work induced sleep disorder and jet-lag, drug addiction, drug abuse, drug withdrawal, obesity and other diseases, were prepared. Thus, amidation of pyridin-2-amine with 3-amino-5,6-diphenylpyrazine-2-carboxylic acid afforded the amide II. The exemplified compds. I have mGluR5 inhibitory activity as shown by inhibition at 10  $\mu$ M or less in the calcium flux assay or 100  $\mu$ M or less or less in the PI assay. The invention is also directed to pharmaceutical compns. comprising compds. I.

IT 863908-32-1P 863908-71-8P

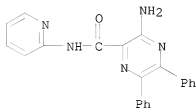
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES

(Uses)

(preparation of bipyridyl amides as modulators of metabotropic glutamate receptor-5)

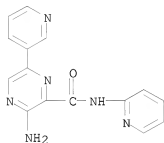
RN 863908-32-1 CAPLUS

CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl-N-2-pyridinyl- (9CI) (CA INDEX NAME)



RN 863908-71-8 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-2-pyridinyl-6-(3-pyridinyl)- (9CI) (CA INDEX NAME)



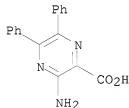
IT 854699-15-3, 3-Amino-5,6-diphenylpyrazine-2-carboxylic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of bipyridyl amides as modulators of metabotropic glutamate receptor-5)

RN 854699-15-3 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT:

5

THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 50 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:761071 CAPLUS

DOCUMENT NUMBER: 144:242879

TITLE: Synthesis and luminescence of a new phosphorescent iridium(III) pyrazine complex

AUTHOR(S): Zhang, Guolin; Guo, Haiqing; Chuai, Yutao; Zou, Dechun

CORPORATE SOURCE: State Key Laboratory of Rare Earth Materials Chemistry and Applications, College of Chemistry and Molecular Engineering, Peking University, Beijing, 100871, Peop. Rep. China

SOURCE: Materials Letters (2005), 59(24-25), 3002-3006  
CODEN: MLETDJ; ISSN: 0167-577X

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

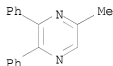
LANGUAGE: English

AB The synthesis and luminescent study of a new Ir pyrazine complex are reported. The Ir complex [Ir(MDPP)2(acac)] (MDPP = 5-methyl-2,3-diphenylpyrazine, acac = acetylacetone) shows strong 1MLCT (singlet metal-to-ligand charge-transfer) and 3MLCT (triplet metal to ligand charge-transfer) absorption at 386 and 507 nm, resp. Organic light emitting device (OLED) with a configuration of ITO/NPB (30 nm)/NPB: 7% (weight) Ir(MDPP)2(acac) (25 nm)/BCP (10 nm)/Alq3(30 nm)/Mg:Ag (mass ratio 10:1)120 nm/Ag(10 nm) exhibits an external quantum efficiency of 6.02% (power efficiency 9.89 lm W-1) and a maximum brightness of 78,924 cd m-2. The device also shows high color purity with a maximum peak at 576 nm without any shoulder.

IT 78605-07-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(synthesis and luminescence of a new phosphorescent iridium(III) pyrazine complex)

RN 78605-07-9 CAPLUS

CN Pyrazine, 5-methyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 51 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:630607 CAPLUS

DOCUMENT NUMBER: 144:221542

TITLE: Photoluminescence of some indolylpyrazines

AUTHOR(S): Tarkhov, L. I.; Potemkin, V. A.; Kovalev, I. S.; Shul'gin, B. V.

CORPORATE SOURCE: GOU VPO Ural. Gos. Tekh. Univ.-UPI, Yekaterinburg, Russia

SOURCE: Materialovedenie (2005), (4), 16-22  
CODEN: MATEC5

PUBLISHER: OOO Nauka i Tekhnologii

DOCUMENT TYPE: Journal

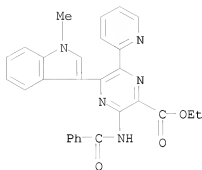
LANGUAGE: Russian

AB The photoluminescence of 20 indolylpyrazine derivs. was studied exptl. and theor. using a BiS algorithm. The relation between the mol. structure and the luminescent wavelength was well predicted by the calcns. and was in good agreement with the exptl. data.

IT 695219-42-2 875932-62-0  
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
(photoluminescence of some indolylpyrazines)

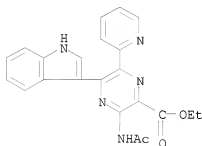
RN 695219-42-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-(benzoylamino)-5-(1-methyl-1H-indol-3-yl)-6-(2-pyridinyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 875932-62-0 CAPLUS

CN Pyrazinecarboxylic acid, 3-(acetylamino)-5-(1H-indol-3-yl)-6-(2-pyridinyl)-, ethyl ester (9CI) (CA INDEX NAME)



L14 ANSWER 52 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:617964 CAPLUS

DOCUMENT NUMBER: 144:80012

TITLE: Iron(II) Octaphenyltetrapyrazinoporphyrazinate Extra Complexes: Synthesis and Some Properties

AUTHOR(S): Kudrik, E. V.; Shishkin, V. N.; Shaposhnikov, G. P.

CORPORATE SOURCE: Ivanovo State University of Chemistry and Technology, Ivanovo, 153000, Russia

SOURCE: Russian Journal of Coordination Chemistry (2005), 31(7), 501-505

CODEN: RJCCEY; ISSN: 1070-3284

PUBLISHER: Pleiades Publishing, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 144:80012

AB Fe(II) octaphenyltetrapyrazinoporphyrazinate [Fe{PzPh2}4PA]·2H2O and its water-soluble sulfo-substituted form [Fe{Pz(4-SO3HPh)2}4PA]·2H2O were synthesized. The effect of pyridine and pyrazine ligand coordination on the spectral properties of sulfo-substituted Fe(II) porphyrazinate was studied. The EPR and 170 NMR methods showed that in an alkaline medium, 1-electron reduction of Fe(II) complex

gave a stable pentacoordinated anionic complex.

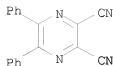
IT 52197-23-6, 5,6-Diphenyl-2,3-dicyanopyrazine

RL: RCT (Reactant); RACT (Reactant or reagent)

(for preparation of iron(II) octaphenyltetrapyrazinoporphyrazinate complexes)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 53 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:564657 CAPLUS

DOCUMENT NUMBER: 143:97383

TITLE: Preparation of pyrazines as protein kinase, especially pUL-97 kinase, inhibitors for treatment of infectious diseases, particularly human cytomegaloviral infections

INVENTOR(S): Eikhoff, Jan Eike; Ashton, Mark Richard; Courtney, Stephen Martin; Yarnold, Christopher John; Varrone, Maurizio; Loke, Pui Leng; Herget, Thomas; Schwab, Wilfried; Hafenbradl, Doris

PATENT ASSIGNEE(S): Axxima Pharmaceuticals A.-G., Germany

SOURCE: PCT Int. Appl., 139 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

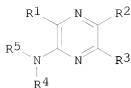
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005058876	A1	20050630	WO 2004-EP14371	20041216
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1694670	A1	20060830	EP 2004-803982	20041216
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS			
PRIORITY APPLN. INFO.:			EP 2003-29038	A 20031216
			US 2003-530612P	P 20031219
			WO 2004-EP14371	W 20041216

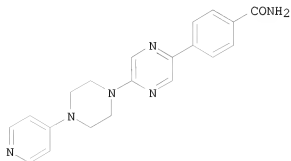
OTHER SOURCE(S): MARPAT 143:97383

GI





I



II

- AB The invention is related to the preparation of title compds. I, and/or stereoisomeric forms, prodrugs, and/or pharmaceutically acceptable salts [wherein R1, R2 = independently H, F, Cl, BR, OH, (un)substituted alk(en/yn)yl, etc.; R3 = (un)substituted cycloalkyl, hetero/aryl, heterocyclyl; R4 = H, alkyl; R5 = H, (un)substituted alkyl, hetero/aryl, heterocyclyl, etc.; R4NR5 = (un)substituted mononitrogen or dinitrogen ring] as protein kinase inhibitors for use in the prophylaxis and/or treatment of infectious diseases, including opportunistic diseases, prion diseases, immunol. diseases, autoimmune diseases, bipolar and clin. disorders, cardiovascular diseases, cell proliferative diseases, diabetes, inflammation, transplant rejections, erectile dysfunction, neurodegenerative diseases and stroke and especially for the treatment of herpesviral induced infections, including opportunistic infections and infections and diseases caused by human cytomegalovirus (HCMV). For example, II was prepared by monoacylation of 2,6-dichloropyrazine with 1-(4-pyridinyl)piperazine and coupling of the chloride with (4-aminocarbonylphenyl)boronic acid. I have an inhibitory effect on the protein kinase activity of various protein kinases, such as pUL-97, EGFR, , etc. I were potent inhibitors of HCMV replication in cell cultures; I showed inhibition of HCMV replication in HFF cells (IC50 < 3 μM). I did not show any or low toxicity up to concns. of 10 μM in HFF cells.
- IT 856005-72-6P, 6'-(Benzo[b]thiophen-2-yl)-3',5'-dimethyl-4-(pyridin-4-yl)-3,4,5,6-tetrahydro-2H-[1,2']bipyrazinyl  
 RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

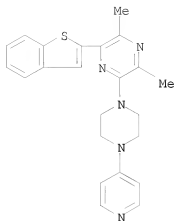
(drug candidate; preparation of pyrazines as protein kinase, especially

pUL-97

kinase, inhibitors for treatment of infectious diseases, particularly human cytomegaloviral infections)

RN 856005-72-6 CAPLUS

CN Pyrazine, 2-benzo[b]thien-2-yl-3,5-dimethyl-6-[4-(4-pyridinyl)-1-piperazinyl]- (CA INDEX NAME)



REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 54 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:517970 CAPLUS

DOCUMENT NUMBER: 143:193975

TITLE: Different behavior of the reaction between 1,2-diaza-1,3-butadienes and 1,2-diamines under solvent or solvent-free conditions

AUTHOR(S): Attanasi, Orazio A.; De Crescentini, Lucia; Favi, Gianfranco; Filippone, Paolino; Lillini, Samuele; Mantellini, Fabio; Santeusano, Stefania

CORPORATE SOURCE: Istituto di Chimica Organica della Facolta di Scienze Matematiche, Fisiche e Naturali, Universita degli Studi di Urbino 'Carlo Bo', Urbino, 61029, Italy

SOURCE: Synlett (2005), (9), 1474-1476

CODEN: SYNLES; ISSN: 0936-5214

PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 143:193975

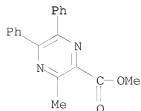
AB New piperazinones are obtained in satisfactory yields by reaction of 1,2-diaza-1,3-butadienes with 1,2-diamines under solvent-free conditions. In polar solvents, the same reagents give rise to interesting dihydropyrazines and then to pyrazines by oxidation with PTAB or Pd/C.

IT 861822-36-8P 861822-37-9P

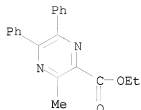
RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of piperazinones by reaction of 1,2-diaza-1,3-butadienes with 1,2-diamines under solvent or solvent-free conditions)

RN 861822-36-8 CAPLUS

CN Pyrazinecarboxylic acid, 3-methyl-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



RN 861822-37-9 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 55 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:493608 CAPLUS  
 DOCUMENT NUMBER: 143:43904  
 TITLE: Preparation of pyrrolo[3,4-b]pyrazine-5,7(6H)-dione derivatives for treating obesity, psychiatric, and neurological disorders  
 INVENTOR(S): Cheng, Leifeng  
 PATENT ASSIGNEE(S): Astrazeneca AB, Swed.; Astrazeneca UK Limited  
 SOURCE: PCT Int. Appl., 26 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005051953	A2	20050609	WO 2004-GB4934	20041124
WO 2005051953	A3	20050728		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004292493	A1	20050609	AU 2004-292493	20041124
CA 2546318	A1	20050609	CA 2004-2546318	20041124
EP 1701958	A2	20060920	EP 2004-798641	20041124
EP 1701958	B1	20070502		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, HR, IS				
CN 1886405	A	20061227	CN 2004-80034802	20041124
AT 361301	T	20070515	AT 2004-798641	20041124
JP 2007512298	T	20070517	JP 2006-540602	20041124
ES 2285544	T3	20071116	ES 2004-4798641	20041124
IN 2006DN02621	A	20070824	IN 2006-DN2621	20060510
US 2007099923	A1	20070503	US 2006-579830	20060517
HK 1096670	A1	20071012	HK 2007-101236	20070201

PRIORITY APPLN. INFO.:

GB 2003-27331

A 20031125

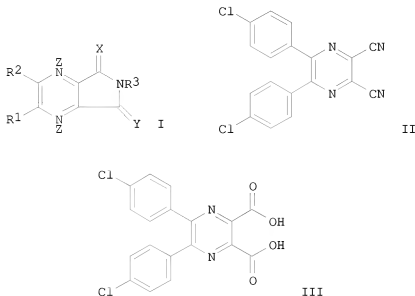
WO 2004-GB4934

W 20041124

OTHER SOURCE(S):

CASREACT 143:43904; MARPAT 143:43904

GI

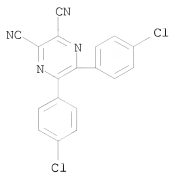


AB The title compds. I [R1, R2 = Ph, thienyl, pyridyl, C1-C10-alkyl, C1-C10-alkoxy, C3-C15-cycloalkyl; R3 = C1-C15-alkyl, C3-C15-cycloalkyl, phenylC1-C4-alkyl, heteroaryl, heteroarylC1-C4-alkyl, R4(CH2)n, R4 = heterocycle, n = 0-4; X, Y = O, S; Z = (O)n, n = 0, 1] were prepared and are designed to be used in the treatment of obesity, psychiatric disorders, neurol. disorders, immune, cardiovascular, reproductive, and endocrine disorders, septic shock, diseases related to respiratory and gastrointestinal systems, and extended abuse, addiction and/or relapse indications. As an example, 1,2-bis(4-chlorophenyl)ethane-1,2-dione reacted with diaminomaleonitrile to give pyrazine-2,3-dicarbonitrile II which was treated with KOH/H2O2 in H2O, esterified, and hydrolyzed to give dicarboxylic acid III. III condensed with 4-FC6H4CH2NH2 to give the mono-amide which cyclized to give the desired compound I (R1 = R2 = 4-ClC6H4, R3 = 4-FC6H4CH2, X = Y = O, Z = none).

IT 810685-47-3P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarbonitrile 810685-48-4P 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic acid 811441-51-7P, 5,6-Bis(4-chlorophenyl)-3-[(piperidin-1-ylamino)carbonyl]pyrazine-2-carboxylic acid 853578-19-5P 853578-23-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of pyrrolo[3,4-b]pyrazine-5,7(6H)-dione derivs. for treating obesity, psychiatric, neurol., immune, cardiovascular, reproductive, and endocrine disorders, septic shock, respiratory and gastrointestinal disorders)

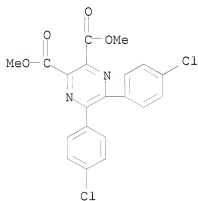
RN 810685-47-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



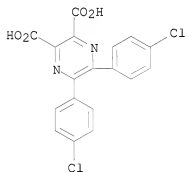
RN 810685-48-4 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, dimethyl ester  
(9CI) (CA INDEX NAME)



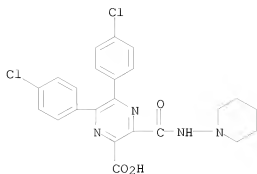
RN 810685-49-5 CAPLUS

CN 2,6-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



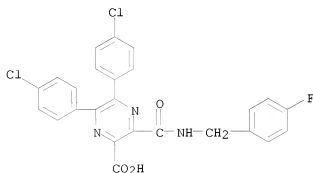
RN 811441-51-7 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]- (9CI) (CA INDEX NAME)



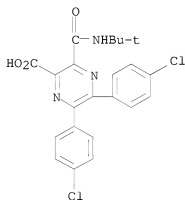
RN 853578-19-5 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(4-fluorophenyl)methyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 853578-23-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(1,1-dimethylethyl)amino]carbonyl]- (9CI) (CA INDEX NAME)



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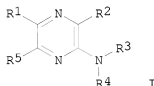
ACCESSION NUMBER: 2005:450934 CAPLUS

DOCUMENT NUMBER: 143:7731

TITLE: Preparation of pyrazine derivatives as adenosine receptor antagonists for treating neurological, cardiovascular, and other diseases

INVENTOR(S): Yonishi, Satoshi; Aoki, Satoshi; Matsushima, Yuji;  
Akahane, Atsushi  
PATENT ASSIGNEE(S): Fujisawa Pharmaceutical Co. Ltd., Japan  
SOURCE: U.S. Pat. Appl. Publ., 37 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005113387	A1	20050526	US 2004-972340	20041026
PRIORITY APPLN. INFO.:			EP 2003-905895	A 20031027
			EP 2004-902764	A 20040524
OTHER SOURCE(S):	MARPAT 143:7731			
GI				



AB Pyrazine derivative of formula I (with variables defined below) or salts thereof are claimed. The pyrazine compound I are adenosine antagonists and are useful for the prevention and/or treatment of depression, dementia (e.g. Alzheimer's disease, cerebrovascular dementia, dementia accompanying Parkinson's disease, etc.), Parkinson's disease, anxiety, pain, cerebrovascular disease (e.g. stroke, etc.), heart failure and the like. A process for preparing the pyrazines and pharmaceutical compns. containing

them are also claimed. For I, R1 is substituted pyridin-2-one or pyridine; R2 is H, OH, halogen, cyano, or optionally substituted lower alkyl, lower alkenyl, lower alkynyl, lower alkoxy, aryloxy, arylthio, acyl, aryl, heterocyclic group or amino; R3 and R4 are independently H, lower alkyl or acyl; and R5 is optionally substituted lower alkyl, lower alkenyl, lower alkynyl, cyano, aryl or heterocyclic group.

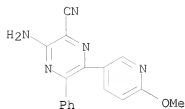
IT 851087-20-2P, 3-Amino-6-(6-methoxy-3-pyridyl)-5-phenyl-2-pyrazinecarbonitrile 851087-21-3P, 3-Amino-6-(6-oxo-1,6-dihydro-3-pyridyl)-5-phenyl-2-pyrazinecarboxamide 851087-27-9P, 3-Amino-6-(6-oxo-1,6-dihydro-3-pyridyl)-5-phenyl-2-pyrazinecarboxylic acid 851087-31-5P, 3-Amino-6-(6-oxo-1,6-dihydro-3-pyridyl)-5-phenyl-2-pyrazinecarbonitrile

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

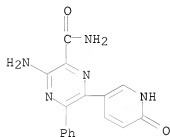
(drug candidate; preparation of pyrazine derivs. as adenosine receptor antagonists for treating neurol., cardiovascular, and other diseases)

RN 851087-20-2 CAPLUS

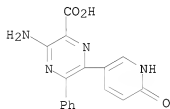
CN Pyrazinecarbonitrile, 3-amino-6-(6-methoxy-3-pyridinyl)-5-phenyl- (9CI)  
(CA INDEX NAME)



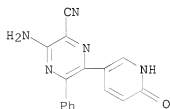
RN 851087-21-3 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-6-(1,6-dihydro-6-oxo-3-pyridinyl)-5-phenyl-  
 (9CI) (CA INDEX NAME)



RN 851087-27-9 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-(1,6-dihydro-6-oxo-3-pyridinyl)-5-  
 phenyl- (9CI) (CA INDEX NAME)



RN 851087-31-5 CAPLUS  
 CN Pyrazinecarbonitrile, 3-amino-6-(1,6-dihydro-6-oxo-3-pyridinyl)-5-phenyl-  
 (9CI) (CA INDEX NAME)



IT 851087-26-8P, 3-Amino-6-(6-isopropoxy-3-pyridinyl)-5-phenyl-2-  
 pyrazinecarboxamide 851087-28-0P, Ethyl 3-amino-6-(6-oxo-1,6-  
 dihydro-3-pyridinyl)-5-phenyl-2-pyrazinecarboxylate 851087-30-4P,  
 Isopropyl 3-amino-6-(6-oxo-1,6-dihydro-3-pyridinyl)-5-phenyl-2-

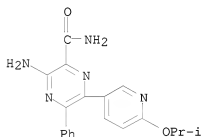


pyrazinecarboxylate 851087-36-0P, 3-Amino-6-(6-methoxy-3-pyridyl)-5-phenyl-2-pyrazinecarboxamide 851087-84-8P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(2-thienyl)-2-pyrazinecarboxamide 851087-85-9P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(3-thienyl)-2-pyrazinecarboxamide 851087-86-0P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(5-methyl-2-thienyl)-2-pyrazinecarboxamide 851087-93-9P, 3-Amino-6-(1-methyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(2-thienyl)-2-pyrazinecarboxamide 851088-05-6P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(2-thienyl)-2-pyrazinecarboxylic Acid 851088-06-7P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(3-thienyl)-2-pyrazinecarboxylic Acid 851088-07-8P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(5-methyl-2-thienyl)-2-pyrazinecarboxylic Acid 851088-12-5P, 3-Amino-6-(1-methyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(2-thienyl)-2-pyrazinecarboxylic Acid  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(drug candidate; preparation of pyrazine derivs. as adenosine receptor antagonists for treating neurol., cardiovascular, and other diseases)

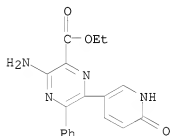
RN 851087-26-8 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-[6-(1-methylethoxy)-3-pyridinyl]-5-phenyl- (9CI) (CA INDEX NAME)



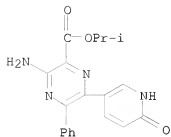
RN 851087-28-0 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(1,6-dihydro-6-oxo-3-pyridinyl)-5-phenyl-, ethyl ester (9CI) (CA INDEX NAME)



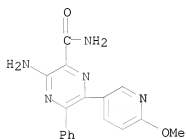
RN 851087-30-4 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(1,6-dihydro-6-oxo-3-pyridinyl)-5-phenyl-, 1-methylethyl ester (9CI) (CA INDEX NAME)



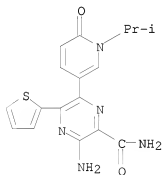
RN 851087-36-0 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-(6-methoxy-3-pyridinyl)-5-phenyl- (9CI)  
(CA INDEX NAME)



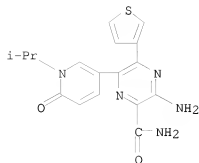
RN 851087-84-8 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(2-thienyl)- (9CI) (CA INDEX NAME)

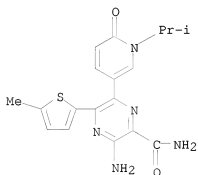


RN 851087-85-9 CAPLUS

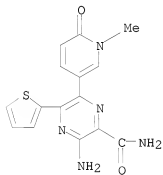
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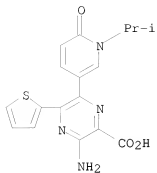
RN 851087-86-0 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(5-methyl-2-thienyl)- (9CI) (CA INDEX NAME)



RN 851087-93-9 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-6-(1,6-dihydro-1-methyl-6-oxo-3-pyridinyl)-5-(2-thienyl)- (9CI) (CA INDEX NAME)

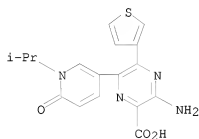


RN 851088-05-6 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(2-thienyl)- (9CI) (CA INDEX NAME)



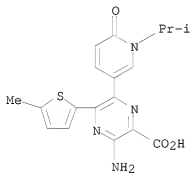
RN 851088-06-7 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(3-thienyl)- (9CI) (CA INDEX NAME)



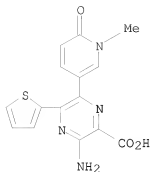
RN 851088-07-8 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(5-methyl-2-thienyl)- (9CI) (CA INDEX NAME)

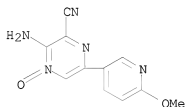


RN 851088-12-5 CAPLUS

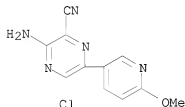
CN Pyrazinecarboxylic acid, 3-amino-6-(1,6-dihydro-1-methyl-6-oxo-3-pyridinyl)-5-(2-thienyl)- (9CI) (CA INDEX NAME)



IT 851087-06-4P 851087-07-5P, 3-Amino-5-chloro-6-(6-methoxy-3-pyridyl)-2-pyrazinecarbonitrile  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of pyrazine derivs. as adenosine receptor antagonists for treating neurol., cardiovascular, and other diseases)  
 RN 851087-06-4 CAPLUS  
 CN Pyrazinecarbonitrile, 3-amino-6-(6-methoxy-3-pyridinyl)-, 4-oxide (9CI)  
 (CA INDEX NAME)



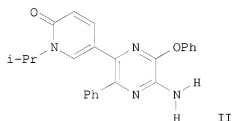
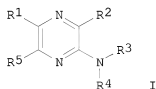
RN 851087-07-5 CAPLUS  
 CN Pyrazinecarbonitrile, 3-amino-5-chloro-6-(6-methoxy-3-pyridinyl)- (9CI)  
 (CA INDEX NAME)



L14 ANSWER 57 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:395298 CAPLUS  
 DOCUMENT NUMBER: 142:447235  
 TITLE: Preparation of pyrazines as adenosine A1 and A2a receptor antagonists and their pharmaceutical compositions  
 INVENTOR(S): Yonishi, Satoshi; Aoki, Satoshi; Matsushima, Yuji; Akahane, Atsushi  
 PATENT ASSIGNEE(S): Fujisawa Pharmaceutical Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 152 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

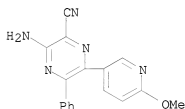
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005040151	A1	20050506	WO 2004-JP16193	20041025
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004283990	A1	20050506	AU 2004-283990	20041025
CA 2543644	A1	20050506	CA 2004-2543644	20041025
EP 1678160	A1	20060712	EP 2004-793294	20041025
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CN 1871231	A	20061129	CN 2004-80031570	20041025
BR 2004015863	A	20070109	BR 2004-15863	20041025
JP 2007510620	T	20070426	JP 2006-519017	20041025
MX 2006PA04575	A	20061120	MX 2006-PA4575	20060425
NO 2006002303	A	20060719	NO 2006-2303	20060522
PRIORITY APPLN. INFO.:			AU 2003-905895	A 20031027
			AU 2004-902764	A 20040524
			WO 2004-JP16193	W 20041025
OTHER SOURCE(S):		CASREACT 142:447235; MARPAT 142:447235		
GI				



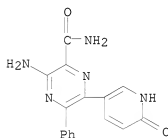
AB Title compound I [wherein R1 = N,3-disubstituted 2(1H)-pyridinonyl, 2-alkoxy-pyridinyl; R2 = H, OH, halo, CN, (un)substituted lower alk(en/yn)yl, alkoxy, aryloxy, arylthio, acyl, aryl, heterocyclyl or amino; R3, R4 = independently H, lower alkyl, acyl; and their salts] and their salts were prepared as adenosine receptor antagonists. For example,

compound II was prepared by etherification of 5-(5-Amino-6-bromo-3-phenyl-2-pyrazinyl)-1-isopropyl-2(1H)-pyridinone (preparation given) with phenol. II showed binding to the human A1 adenosine receptor with  $K_i = 1.57$  nM and to the human A2a adenosine receptor with  $K_i = 0.32$  nM. Thus, I are useful as A1 receptor and A2a receptor dual antagonists and for the prevention and/or treatment of depression, dementia (e.g. Alzheimer's disease, cerebrovascular dementia, dementia accompanying Parkinson's disease, etc.), Parkinson's disease, anxiety, pain, cerebrovascular disease (e.g. stroke, etc.), heart failure and the like (no data).

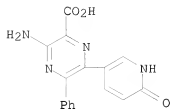
IT 851087-20-2P, 3-Amino-6-(6-methoxy-3-pyridyl)-5-phenyl-2-pyrazinecarbonitrile 851087-21-3P, 3-Amino-6-(6-oxo-1,6-dihydro-3-pyridyl)-5-phenyl-2-pyrazinecarboxamide 851087-27-9P, 3-Amino-6-(6-oxo-1,6-dihydro-3-pyridyl)-5-phenyl-2-pyrazinecarboxylic acid 851087-31-5P, 3-Amino-6-(6-oxo-1,6-dihydro-3-pyridyl)-5-phenyl-2-pyrazinecarbonitrile  
 RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (drug candidate; preparation of pyrazines as adenosine receptor antagonists)  
 RN 851087-20-2 CAPLUS  
 CN Pyrazinecarbonitrile, 3-amino-6-(6-methoxy-3-pyridinyl)-5-phenyl- (9CI)  
 (CA INDEX NAME)



RN 851087-21-3 CAPLUS  
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 (CA INDEX NAME)

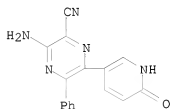


RN 851087-27-9 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-(1,6-dihydro-6-oxo-3-pyridinyl)-5-phenyl- (9CI)  
 (CA INDEX NAME)



RN 851087-31-5 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-6-(1,6-dihydro-6-oxo-3-pyridinyl)-5-phenyl-  
(9CI) (CA INDEX NAME)

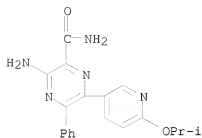


IT 851087-26-8P, 3-Amino-6-(6-isopropoxy-3-pyridyl)-5-phenyl-2-pyrazinecarboxamide 851087-28-0P, Ethyl 3-amino-6-(6-oxo-1,6-dihydro-3-pyridyl)-5-phenyl-2-pyrazinecarboxylate 851087-30-4P, Isopropyl 3-amino-6-(6-oxo-1,6-dihydro-3-pyridyl)-5-phenyl-2-pyrazinecarboxylate 851087-36-0P, 3-Amino-6-(6-methoxy-3-pyridyl)-5-phenyl-2-pyrazinecarboxamide 851087-84-8P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(2-thienyl)-2-pyrazinecarboxamide 851087-85-9P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(3-thienyl)-2-pyrazinecarboxamide 851087-86-0P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(5-methyl-2-thienyl)-2-pyrazinecarboxamide 851087-93-9P, 3-Amino-6-(1-methyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(2-thienyl)-2-pyrazinecarboxamide 851088-05-6P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(2-thienyl)-2-pyrazinecarboxylic acid 851088-06-7P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(3-thienyl)-2-pyrazinecarboxylic acid 851088-07-8P, 3-Amino-6-(1-isopropyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(5-methyl-2-thienyl)-2-pyrazinecarboxylic acid 851088-12-5P, 3-Amino-6-(1-methyl-6-oxo-1,6-dihydro-3-pyridyl)-5-(2-thienyl)-2-pyrazinecarboxylic acid  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(drug candidate; preparation of pyrazines as adenosine receptor antagonists)

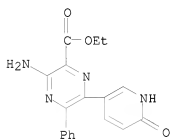
RN 851087-26-8 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-[6-(1-methylethoxy)-3-pyridinyl]-5-phenyl-  
(9CI) (CA INDEX NAME)

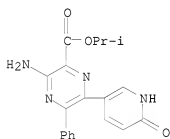




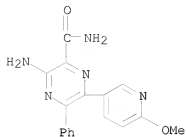
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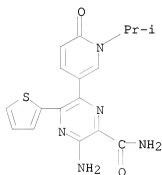
RN 851087-30-4 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-(1,6-dihydro-6-oxo-3-pyridinyl)-5-phenyl-, 1-methylethyl ester (9CI) (CA INDEX NAME)



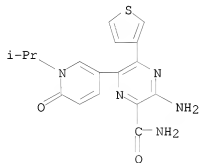
RN 851087-36-0 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-6-(6-methoxy-3-pyridinyl)-5-phenyl- (9CI)  
 (CA INDEX NAME)



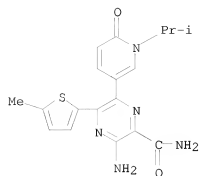
RN 851087-84-8 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(2-thienyl)- (9CI) (CA INDEX NAME)



RN 851087-85-9 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(3-thienyl)- (9CI) (CA INDEX NAME)

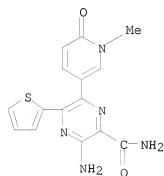


RN 851087-86-0 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(5-methyl-2-thienyl)- (9CI) (CA INDEX NAME)



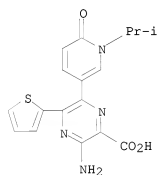
RN 851087-93-9 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-(1,6-dihydro-1-methyl-6-oxo-3-pyridinyl)-5-(2-thienyl)- (9CI) (CA INDEX NAME)



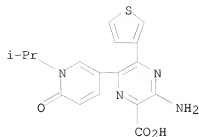
RN 851088-05-6 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(2-thienyl)- (9CI) (CA INDEX NAME)



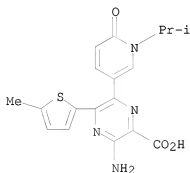
RN 851088-06-7 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(3-thienyl)- (9CI) (CA INDEX NAME)



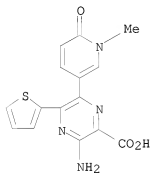
RN 851088-07-8 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-[1,6-dihydro-1-(1-methylethyl)-6-oxo-3-pyridinyl]-5-(5-methyl-2-thienyl)- (9CI) (CA INDEX NAME)



RN 851088-12-5 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(1,6-dihydro-1-methyl-6-oxo-3-pyridinyl)-5-(2-thienyl)- (9CI) (CA INDEX NAME)



IT 851087-06-4P, 3-Amino-6-(6-methoxy-3-pyridyl)-2-

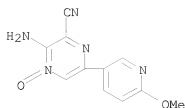
pyrazinecarbonitrile 4-oxide 851087-07-5P, 3-Amino-5-chloro-6-(6-methoxy-3-pyridyl)-2-pyrazinecarbonitrile

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

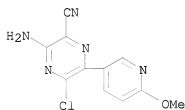
(intermediate; preparation of pyrazines as adenosine receptor antagonists)

RN 851087-06-4 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-6-(6-methoxy-3-pyridinyl)-, 4-oxide (9CI) (CA INDEX NAME)

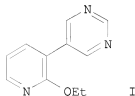


RN 851087-07-5 CAPLUS  
 CN Pyrazinecarbonitrile, 3-amino-5-chloro-6-(6-methoxy-3-pyridinyl)- (9CI)  
 (CA INDEX NAME)



REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 58 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:378815 CAPLUS  
 DOCUMENT NUMBER: 143:59789  
 TITLE: 2-Ethoxy-3-pyridylboronic acid: a versatile reagent for the synthesis of highly-functionalized 3-aryl/heteroaryl-pyridines via Suzuki cross-coupling reactions  
 AUTHOR(S): Thompson, Amy E.; Batsanov, Andrei S.; Bryce, Martin R.; Saygili, Nezire; Parry, Paul R.; Tarbit, Brian  
 CORPORATE SOURCE: Department of Chemistry, University of Durham, Durham, DH1 3LE, UK  
 SOURCE: Tetrahedron (2005), 61(21), 5131-5135  
 CODEN: TETRAB; ISSN: 0040-4020  
 PUBLISHER: Elsevier B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 143:59789  
 GI



AB The com.-viable synthesis and isolation of 2-ethoxy-3-pyridylboronic acid on a ca. 70 g scale via a directed ortho-metalation reaction on readily-available 2-ethoxypyridine is described. A range of efficient cross-coupling reactions of 2-ethoxy-3-pyridylboronic acid with selected aryl/heteroaryl halides under palladium-catalyzed Suzuki-Miyaura

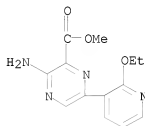
conditions yield 2-ethoxy-3-arylpyridines, e.g, I, in high yield. The X-ray crystal structure of 2-ethoxy-3-pyridylboronic acid reveals that the boronic acid group takes part in an intramol. O-H...O bond with the adjacent ethoxy substituent, and an intermol. O-H...N bond.

IT 854374-04-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of arylpyridines via Suzuki cross-coupling of ethoxypyridylboronic acid with aryl halides)

RN 854374-04-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(2-ethoxy-3-pyridinyl)-, methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 59 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:283493 CAPLUS

DOCUMENT NUMBER: 142:355283

TITLE: Preparation of triazolopyrazines, pyrazolopyrimidines, pyrazolopyridines, pyrazolopyrazines and related compounds as corticotropin releasing factor (CRF) receptor ligands.

INVENTOR(S): Hodgetts, Kevin J.; John, Stanly; Moorcroft, Neil; Shutske, Greg; Kaiser, Bernd; Yamaguchi, Yasuchika; Ge, Ping; Horvath, Raymond F.

PATENT ASSIGNEE(S): Neurogen Corporation, USA; Aventis Pharmaceuticals Inc.

SOURCE: PCT Int. Appl., 187 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

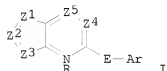
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005028480	A2	20050331	WO 2004-US28663	20040903
WO 2005028480	A3	20050602		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2004274403	A1	20050331	AU 2004-274403	20040903
CA 2537916	A1	20050331	CA 2004-2537916	20040903
US 2005070542	A1	20050331	US 2004-933700	20040903
EP 1675858	A2	20060705	EP 2004-788563	20040903
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
JP 2007504243	T	20070301	JP 2006-525454	20040903
PRIORITY APPLN. INFO.:			US 2003-500033P	P 20030903
			WO 2004-US28663	W 20040903
OTHER SOURCE(S):			CASREACT 142:355283; MARPAT 142:355283	
GI				

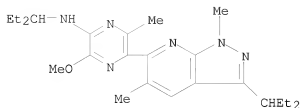


AB Title compds. [I; E = bond, O, S, SO, SO<sub>2</sub>, NR10, CR10R11; Ar = substituted Ph, naphthyl, heteroaryl; R = null, O; Z1 = CR1, CR1R1', NR1''; Z2 = N, NR2''; Z3 = CR3, CR3R3', N, NR3'', O, S, SO, SO<sub>2</sub>; R1 = halo, OH, cyano, amino, (substituted) alkyl, alkenyl, alkynyl, alkoxy, heterocycloalkyl, etc.; R1'' = (substituted) alkyl, alkenyl, alkynyl, heterocycloalkyl, cycloalkylalkyl, aryl, heteroaryl, etc.; R3 = H, halo, OH, amino, cyano, NO<sub>2</sub>, alkyl, haloalkyl, alkoxy, etc.; R1', R3' = H, halo, alkyl, haloalkyl, aminoalkyl; R2'', R3'' = H, alkyl, haloalkyl, (substituted) amino, alkanoyl, aminoalkyl; Z4 = NR, CR4; Z5 = NR, CR5; R4, R5 = H, halo, OH, amino, cyano, NO<sub>2</sub>, (substituted) alkyl, alkenyl, alkynyl, alkoxy, amino, alkylthio, alkylsulfinyl, alkylsulfonyl, aryl, heteroaryl, etc.; R10, R11 = H, alkyl], were prepared for treatment of anxiety, stress, eating disorders, depression, or bipolar disorder. Thus, 5-bromo-N<sub>2</sub>-(1-ethylpropyl)-6-methylpyrazine-2,3-diamine (preparation given), 2-methoxy-4-trifluoromethoxyphenylboronic acid, (PPh<sub>3</sub>)<sub>4</sub>Pd, and aqueous K<sub>2</sub>CO<sub>3</sub> were heated together in PhMe in a sealed tube at 80° for 16 h to give aryl coupling product, which was refluxed 50 min. with tBuNO and HOAc in THF to give 1-(1-ethylpropyl)-5-(2-methoxy-4-trifluoromethoxyphenyl)-6-methyl-1H-[1,2,3]-triazolo[4,5-b]pyrazine. The latter and 32 addnl. I showed CRF receptor binding activity with IC<sub>50</sub> ≤ 4 μM. Methods of using I in receptor localization studies are given.

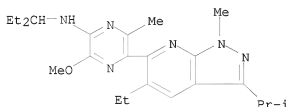
IT 848946-35-0P 848946-47-4P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (claimed compound; preparation of triazolopyrazines, pyrazolopyrimidines, pyrazolopyridines, pyrazolopyrazines and related compds. as corticotropin releasing factor receptor ligands)

RN 848946-35-0 CAPUS

CN Pyrazinamine, N-(1-ethylpropyl)-5-[3-(1-ethylpropyl)-1,5-dimethyl-1H-pyrazolo[3,4-b]pyridin-6-yl]-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)

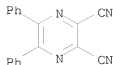


RN 848946-47-4 CAPLUS  
 CN Pyrazinamine, 5-[5-ethyl-1-methyl-3-(1-methylethyl)-1H-pyrazolo[3,4-b]pyridin-6-yl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



L14 ANSWER 60 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:170021 CAPLUS  
 DOCUMENT NUMBER: 142:470169  
 TITLE: Kinetics and mechanism of the Co(II)-assisted oxidation of thioureas by dioxygen  
 AUTHOR(S): Kudrik, Evgeny V.; Theodoridis, Alexander; van Eldik, Rudi; Makarov, Sergei V.  
 CORPORATE SOURCE: Institute for Inorganic Chemistry, University of Erlangen-Nuernberg, Erlangen, 91058, Germany  
 SOURCE: Dalton Transactions (2005), (6), 1117-1122  
 CODEN: DTARAF; ISSN: 1477-9226  
 PUBLISHER: Royal Society of Chemistry  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Catalytic oxidation of N,N'-dimethylthiourea and thiourea by dioxygen in water using a new cobalt(II) complex of octasulfophenyltetrapyrazinoporphyrazine was performed under mild conditions. The reaction is shown to include the formation of an intermediate anionic five-coordinate complex followed by an unusual two-electron oxidation to produce the corresponding urea and elemental sulfur (S8). Kinetic and thermodynamic parameters for the different reaction steps of the process were determined. Drastic differences in catalytic activity of cobalt and iron octasulfophenyltetrapyrazinoporphyrazines were observed.  
 IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (kinetics and mechanism of the Co(II)-assisted oxidation of thioureas by dioxygen)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)





REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 61 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:162032 CAPLUS  
 DOCUMENT NUMBER: 142:261562  
 TITLE: Preparation of pyridazine, pyrimidine and pyrazine ethyne compounds  
 INVENTOR(S): Cosford, Nicholas D.; Roppe, Jeffrey R.; Tehrani, Lida R.; Smith, Nicholas D.; Stearns, Brian; Huang, Dehua; Wang, Bowei  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. Ser. No. 217,800.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 5  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005043307	A1	20050224	US 2004-874835	20040623
US 2003055247	A1	20030320	US 2002-217800	20020813
US 6774138	B2	20040810		
US 2005245542	A1	20051103	US 2005-97047	20050401
PRIORITY APPLN. INFO.:			US 1999-387073	B2 19990831
			US 2002-217800	A2 20020813
			US 2004-874835	A2 20040623

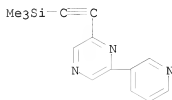
OTHER SOURCE(S): CASREACT 142:261562; MARPAT 142:261562  
 GI



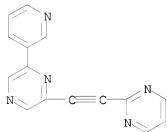
II

AB In accordance with the present invention, there is provided a novel class of heterocyclic compds. A-L-B [I; A = II (wherein at least one of W, X, Y and Z = (CR)<sub>p</sub>; p = 0-2 and the remainder of W, X, Y and Z = O, N or S); R = halo, alkyl, aryl, etc.; q = 0-3; L = alkenylene, alkynylene, azo; B = alkyl, cycloalkyl, heterocyclyl, aryl, etc.]. Over fifty examples demonstrate synthesis of the compds. I. Thus, reacting 3-[(trimethylsilyl)ethynyl]pyridine with 3-chloro-6-methylpyridazine in the presence of TBAF, CuI, Pd[PPh<sub>3</sub>]<sub>4</sub> and Et<sub>3</sub>N in ethylene glycol at 80° for 12 h afforded 3-methyl-6-(pyridin-3-ylethynyl)pyridazine. Invention compds. I are capable of a wide variety of uses. For example heterocyclic compds. can act to modulate physiol. processes by functioning as agonists and antagonists of receptors in the nervous system (no data; also not claimed). Invention compds. may also act as insecticides, and as fungicides (no data or claim). Pharmaceutical compds. containing invention

comps. I also have wide utility (composition is claimed).  
 IT 883456-22-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of pyridazine, pyrimidine and pyrazine ethyne comps.)  
 RN 883456-22-2 CAPLUS  
 CN Pyrazine, 6-(3-pyridinyl)-2-[(trimethylsilyl)ethynyl]- (9CI) (CA INDEX NAME)



IT 845894-56-6P  
 RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of pyridazine, pyrimidine and pyrazine ethyne comps.)  
 RN 845894-56-6 CAPLUS  
 CN Pyrimidine, 2-[[6-(3-pyridinyl)pyrazinyl]ethynyl]- (9CI) (CA INDEX NAME)



L14 ANSWER 62 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:158514 CAPLUS  
 DOCUMENT NUMBER: 142:261555  
 TITLE: Preparation of pyrazine derivatives as modulators of cannabinoid receptors  
 INVENTOR(S): Ellsworth, Bruce A.; Sun, Chongqing; Pendri, Annapurna  
 PATENT ASSIGNEE(S): Bristol-Myers Squibb Company, USA  
 SOURCE: PCT Int. Appl., 74 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005016286	A2	20050224	WO 2004-US26599	20040816
WO 2005016286	A8	20050414		
WO 2005016286	A3	20050609		

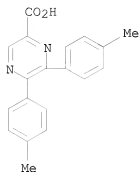
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,



as modulators of cannabinoid receptors)

RN 548760-12-9 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)



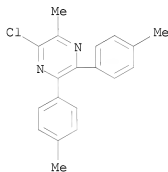
IT 845728-85-0P, 2-Chloro-5,6-bis(4-methylphenyl)-3-methylpiperazine

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and amination reactions of; preparation of pyrazine derivs. as modulators of cannabinoid receptors)

RN 845728-85-0 CAPLUS

CN Pyrazine, 2-chloro-3-methyl-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



IT 845728-70-3P

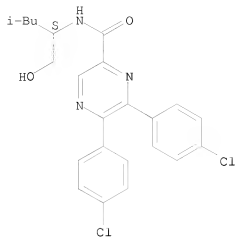
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation and phosphorylation of; preparation of pyrazine derivs. as modulators of cannabinoid receptors)

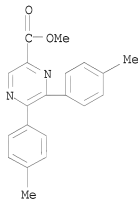
RN 845728-70-3 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-[(1S)-1-(hydroxymethyl)-3-methylbutyl]- (CA INDEX NAME)

Absolute stereochemistry.

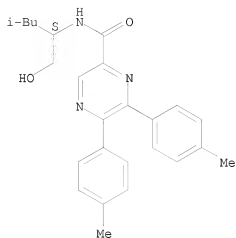


IT 845728-82-7P, Methyl 5,6-bis(4-methylphenyl)pyrazine-2-carboxylate  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and saponification of; preparation of pyrazine derivs. as  
 modulators of  
 cannabinoid receptors)  
 RN 845728-82-7 CAPLUS  
 CN Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)-, methyl ester (9CI) (CA  
 INDEX NAME)



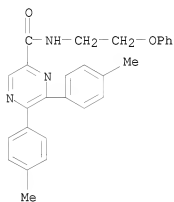
IT 845728-52-1P 845728-53-2P 845728-54-3P  
 845728-55-4P 845728-56-5P 845728-57-6P  
 845728-58-7P 845728-59-8P 845728-60-1P  
 845728-62-3P 845728-63-4P 845728-64-5P  
 845728-65-6P 845728-66-7P 845728-67-8P  
 845728-68-9P 845728-77-0P 845728-78-1P  
 845728-79-2P 845728-80-5P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU  
 (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
 (Uses)  
 (preparation of pyrazine derivs. as modulators of cannabinoid receptors)  
 RN 845728-52-1 CAPLUS  
 CN 2-Pyrazinecarboxamide, N-[(1S)-1-(hydroxymethyl)-3-methylbutyl]-5,6-bis(4-  
 methylphenyl)- (CA INDEX NAME)

Absolute stereochemistry.



RN 845728-53-2 CAPLUS

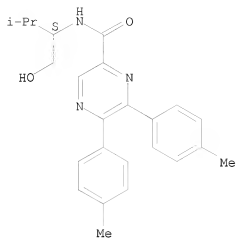
CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-(2-phenoxyethyl)- (CA INDEX NAME)



RN 845728-54-3 CAPLUS

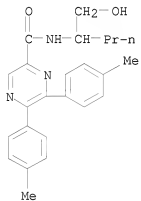
CN 2-Pyrazinecarboxamide, N-[(1S)-1-(hydroxymethyl)-2-methylpropyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

Absolute stereochemistry.



RN 845728-55-4 CAPLUS

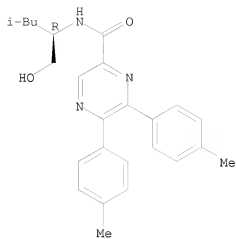
CN 2-Pyrazinecarboxamide, N-[1-(hydroxymethyl)butyl]-5,6-bis(4-methylphenyl)-  
(CA INDEX NAME)



RN 845728-56-5 CAPLUS

CN 2-Pyrazinecarboxamide, N-[(1R)-1-(hydroxymethyl)-3-methylbutyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

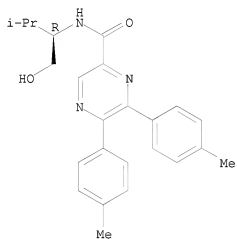
Absolute stereochemistry.



RN 845728-57-6 CAPLUS

CN 2-Pyrazinecarboxamide, N-[(1R)-1-(hydroxymethyl)-2-methylpropyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

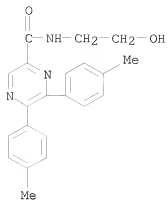
Absolute stereochemistry.



RN 845728-58-7 CAPLUS

CN 2-Pyrazinecarboxamide, N-(2-hydroxyethyl)-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

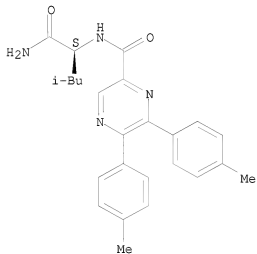




RN 845728-59-8 CAPLUS

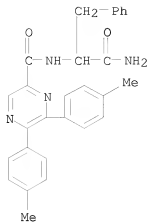
CN Pyrazinecarboxamide, N-[(1S)-1-(aminocarbonyl)-3-methylbutyl]-5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



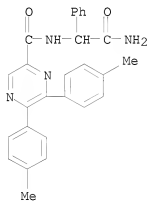
RN 845728-60-1 CAPLUS

CN Pyrazinecarboxamide, N-[2-amino-2-oxo-1-(phenylmethyl)ethyl]-5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



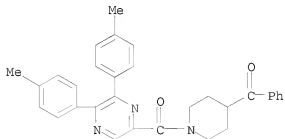
RN 845728-62-3 CAPLUS

CN Pyrazinecarboxamide, N-(2-amino-2-oxo-1-phenylethyl)-5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



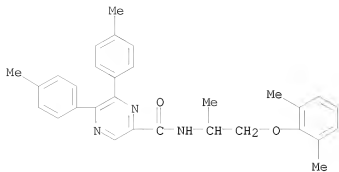
RN 845728-63-4 CAPLUS

CN Piperidine, 4-benzoyl-1-[[5,6-bis(4-methylphenyl)pyrazinyl]carbonyl]- (9CI) (CA INDEX NAME)



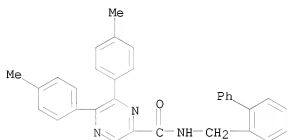
RN 845728-64-5 CAPLUS

CN 2-Pyrazinecarboxamide, N-[2-(2,6-dimethylphenoxy)-1-methylethyl]-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



RN 845728-65-6 CAPLUS

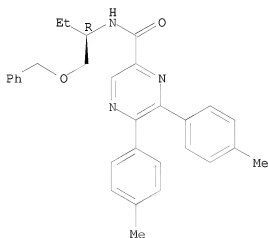
CN Pyrazinecarboxamide, N-([1,1'-biphenyl]-2-ylmethyl)-5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 845728-66-7 CAPLUS

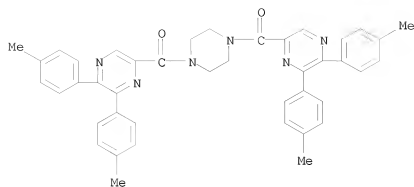
CN Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-[(1R)-1-[(phenylmethoxy)methyl]propyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



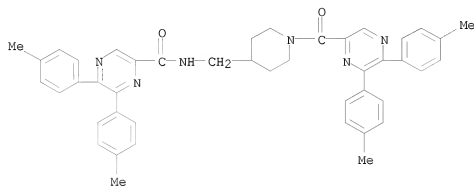
RN 845728-67-8 CAPLUS

CN Piperazine, 1,4-bis[[5,6-bis(4-methylphenyl)pyrazinyl]carbonyl]- (9CI) (CA INDEX NAME)



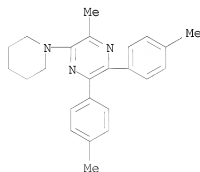
RN 845728-68-9 CAPLUS

CN Pyrazinecarboxamide, N-[[1-[[5,6-bis(4-methylphenyl)pyrazinyl]carbonyl]-4-piperidinyl]methyl]-5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



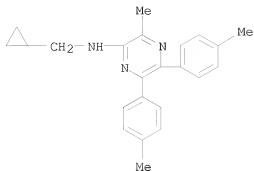
RN 845728-77-0 CAPLUS

CN Pyrazine, 2-methyl-5,6-bis(4-methylphenyl)-3-(1-piperidinyl)- (CA INDEX NAME)



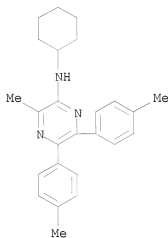
RN 845728-78-1 CAPLUS

CN Pyrazinamine, N-(cyclopropylmethyl)-3-methyl-5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



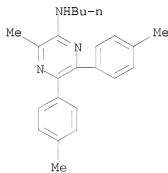
RN 845728-79-2 CAPLUS

CN Pyrazinamine, N-cyclohexyl-3-methyl-5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 845728-80-5 CAPLUS

CN Pyrazinamine, N-butyl-3-methyl-5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

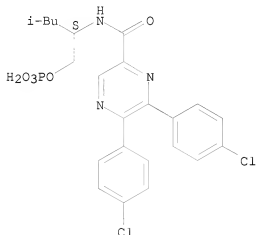


IT 845728-81-6P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(prodrug; preparation of pyrazine derivs. as modulators of cannabinoid

receptors)  
RN 845728-81-6 CAPLUS  
CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-[(1S)-3-methyl-1-  
[(phosphonoxy)methyl]butyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L14 ANSWER 63 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:133800 CAPLUS

DOCUMENT NUMBER: 142:403601

TITLE: Tumor cell sensitization to apoptotic stimuli by  
selective inhibition of specific Akt/PKB family  
members

AUTHOR(S): DeFeo-Jones, Deborah; Barnett, Stanley F.; Fu, Sheng;  
Hancock, Paula J.; Haskell, Kathleen M.; Leander,  
Karen R.; McAvoy, Elizabeth; Robinson, Ronald G.;  
Duggan, Mark E.; Lindsley, Craig W.; Zhao, Zhijian;  
Huber, Hans E.; Jones, Raymond E.

CORPORATE SOURCE: Department of Cancer Research and Technology Enabled  
Synthesis Group, Department of Medicinal Chemistry,  
Merck Research Laboratories, West Point, PA, USA

SOURCE: Molecular Cancer Therapeutics (2005), 4(2), 271-279  
CODEN: MCTOCF; ISSN: 1535-7163

PUBLISHER: American Association for Cancer Research

DOCUMENT TYPE: Journal

LANGUAGE: English

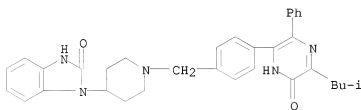
AB Recent studies indicate that dysregulation of the Akt/PKB family of  
serine/threonine kinases is a prominent feature of many human cancers.  
The Akt/PKB family is composed of three members termed Akt1/PKB $\alpha$ ,  
Akt2/PKB $\beta$ , and Akt3/PKB $\gamma$ . It is currently not known to  
what extent there is functional overlap between these family members. We  
have recently identified small mol. inhibitors of Akt. These compds. have  
pleckstrin homol. domain-dependent, isoenzyme-specific activity. In this  
report, we present data showing the relative contribution that inhibition  
of the different isoenzymes has on the apoptotic response of tumor cells  
to a variety of chemotherapies. In multiple cell backgrounds, maximal  
induction of caspase-3 activity is achieved when both Akt1 and Akt2 are  
inhibited. This induction is not reversed by overexpression of  
functionally active Akt3. The level of caspase-3 activation achieved  
under these conditions is equivalent to that observed with the  
phosphatidylinositol-3-kinase inhibitor LY294002. We also show that in  
different tumor cell backgrounds inhibition of mammalian target of

rapamycin, a downstream substrate of Akt, is less effective in inducing caspase-3 activity than inhibition of Akt1 and Akt2. This shows that the survival phenotype conferred by Akt can be mediated by signaling pathways independent of mammalian target of rapamycin in some tumor cell backgrounds. Finally, we show that inhibition of both Akt1 and Akt2 selectively sensitizes tumor cells, but not normal cells, to apoptotic stimuli.

IT 612848-78-9 616873-28-0  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (tumor cell sensitization to apoptotic stimuli by selective inhibition of specific Akt/PKBs)

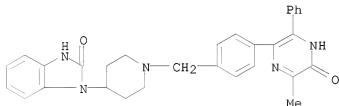
RN 612848-78-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 616873-28-0 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-methyl-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 64 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:86368 CAPLUS

DOCUMENT NUMBER: 142:211437

TITLE: Discovery of 2,3,5-trisubstituted pyridine derivatives as potent Akt1 and Akt2 dual inhibitors

AUTHOR(S): Zhao, Zhijian; Leister, William H.; Robinson, Ronald G.; Barnett, Stanley F.; Defeo-Jones, Deborah; Jones, Raymond E.; Hartman, George D.; Huff, Joel R.; Huber, Hans E.; Duggan, Mark E.; Lindsley, Craig W.

CORPORATE SOURCE: Department of Medicinal Chemistry, Technology Enabled Synthesis Group, Merck Research Laboratories, Merck & Co., West Point, PA, 19486, USA

SOURCE: Bioorganic & Medicinal Chemistry Letters (2005), 15(4), 905-909

CODEN: BMCLE8; ISSN: 0960-894X

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 142:211437

AB This letter describes the discovery of a novel series of dual Akt1/Akt2 kinase inhibitors, based on a 2,3,5-trisubstituted pyridine scaffold. Compds. from this series, which contain a 5-tetrazolyl moiety, exhibit more potent inhibition of Akt2 than Akt1.

IT 612848-78-9 616873-28-0

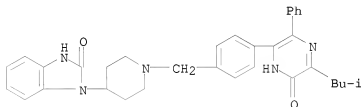
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL

(Biological study); USES (Uses)

(preparation of 2,3,5-trisubstituted pyridine derivs. as potent Akt1/Akt2 dual inhibitors)

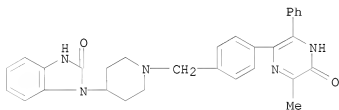
RN 612848-78-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 616873-28-0 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-methyl-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 65 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:74699 CAPLUS

DOCUMENT NUMBER: 142:211435

TITLE: Allosteric Akt (PKB) inhibitors: discovery and SAR of isozyme selective inhibitors

AUTHOR(S): Lindsley, Craig W.; Zhao, Zhijian; Leister, William H.; Robinson, Ronald G.; Barnett, Stanley F.; Defeo-Jones, Deborah; Jones, Raymond E.; Hartman, George D.; Huff, Joel R.; Huber, Hans E.; Duggan, Mark E.

CORPORATE SOURCE: Department of Medicinal Chemistry, Technology Enabled Synthesis Group, Merck Research Laboratories, Merck & Co., West Point, PA, 19486, USA

SOURCE: Bioorganic & Medicinal Chemistry Letters (2005),



15(3), 761-764  
 CODEN: BMCLE8; ISSN: 0960-894X  
 Elsevier B.V.  
 PUBLISHER: Journal  
 DOCUMENT TYPE: English  
 LANGUAGE: CASREACT 142:211435  
 OTHER SOURCE(S):

AB This letter describes the development of two series of potent and selective allosteric Akt kinase inhibitors that display an unprecedented level of selectivity for either Akt1, Akt2 or both Akt1/Akt2. An iterative analog library synthesis approach quickly provided a highly selective Akt1/Akt2 inhibitor that induces apoptosis in tumor cells and inhibits Akt phosphorylation in vivo.

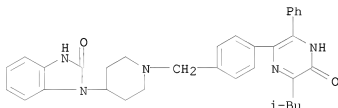
IT 612847-15-1P 612847-21-9P 612847-23-1P  
 612848-78-9P 616873-18-8P 616873-20-2P  
 616873-28-0P 616873-30-4P 841288-47-9P  
 841288-48-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(pyrazinone derivs. preparation and SAR of Akt isoenzyme selective inhibition)

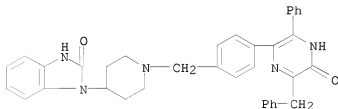
RN 612847-15-1 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



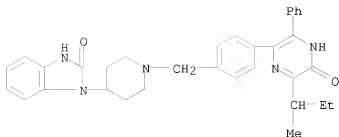
RN 612847-21-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-5-oxo-3-phenyl-6-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



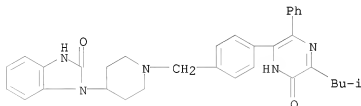
RN 612847-23-1 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



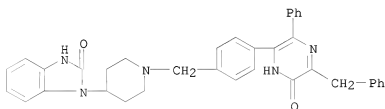
RN 612848-78-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



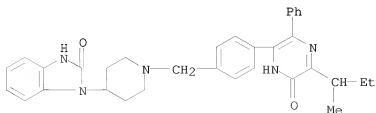
RN 616873-18-8 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-6-oxo-3-phenyl-5-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



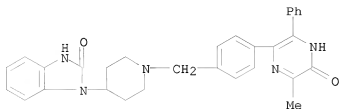
RN 616873-20-2 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



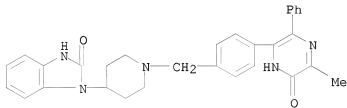
RN 616873-28-0 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-methyl-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



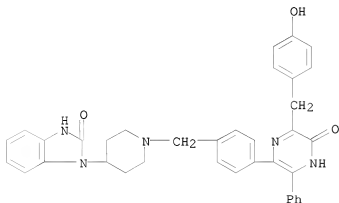
RN 616873-30-4 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(1,6-dihydro-5-methyl-6-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



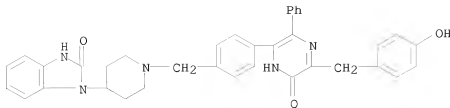
RN 841288-47-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-[(4-hydroxyphenyl)methyl]-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 841288-48-0 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-[(4-hydroxyphenyl)methyl]-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

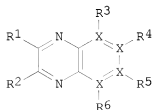
L14 ANSWER 66 OF 399 CAPLUS COPYRIGHT 2007 ACS on SIN  
 ACCESSION NUMBER: 2005:71069 CAPLUS  
 DOCUMENT NUMBER: 142:176856  
 TITLE: Preparation of quinoxaline and pyrido[2,3-b]pyrazine derivatives as PKB inhibitors for treatment of cancers  
 INVENTOR(S): Kawakami, Joel; Duncton, Matthew; Sherman, Dan; He, Hai-Ying; Kiselyov, Alexander; Pytowski, Broniek  
 PATENT ASSIGNEE(S): Imclone Systems Incorporated, USA  
 SOURCE: PCT Int. Appl., 126 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005007099	A2	20050127	WO 2004-US21834	20040709
WO 2005007099	A3	20050414		

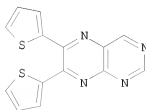
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-486339P P 20030710  
 OTHER SOURCE(S): CASREACT 142:176856; MARPAT 142:176856  
 GI



I

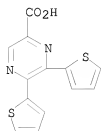


II

AB Title compds. represented by the formula I [wherein X = N or C; R1, R2 = independently H, (cyclo)alkyl, alkoxy, heterocyclyl(alkyl), (hetero)aryl,

(hetero)aralkyl, (un)substituted amino; R3-R6 = independently H, cyano, (hetero)aryl, (cyclo)alkyl, etc.; with a proviso] were prepared as PKB inhibitors. For example, reaction of 4,5-diaminopyrimidine with 2,2'-thienyl gave II in 19% yield. I were tested for inhibition of PKB in PKBa, PKBb and PKBy in vitro kinase assay. Thus, I and their pharmaceutical comps. are useful as PKB inhibitors for the treatment of cancers, or the inhibition of tumor growth.

IT 832080-99-6P, 5,6-Bis(thiophen-2-yl)pyrazin-2-carboxylic acid  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of quinoxaline and pyrido[2,3-b]pyrazine derivs. as PKB inhibitors for treatment of cancers)  
 RN 832080-99-6 CAPLUS  
 CN Pyrazinecarboxylic acid, 5,6-di-2-thienyl- (9CI) (CA INDEX NAME)



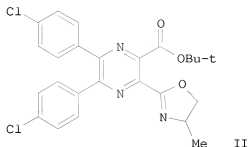
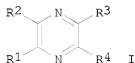
L14 ANSWER 67 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:1127371 CAPLUS  
 DOCUMENT NUMBER: 142:56364  
 TITLE: Preparation of 2,3-substituted 5,6-diaryl-pyrazine derivatives as Cbl modulators  
 INVENTOR(S): Cheng, Leifeng; Wilstermann, Michael  
 PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.  
 SOURCE: PCT Int. Appl., 54 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004111039	A1	20041223	WO 2004-SE968	20040616
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004247614	A1	20041223	AU 2004-247614	20040616
CA 2527037	A1	20041223	CA 2004-2527037	20040616
EP 1638956	A1	20060329	EP 2004-749010	20040616
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				

JP 2006527769	T	20061207	JP 2006-517042	20040616
US 2007093505	A1	20070426	US 2005-561033	20051216
PRIORITY APPLN. INFO.:			GB 2003-14261	A 20030619
			WO 2004-SE968	W 20040616

OTHER SOURCE(S): MARPAT 142:56364

GI



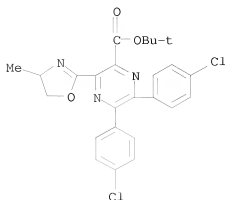
AB Title compds. I [wherein R<sub>1</sub>, R<sub>2</sub> = independently (un)substituted Ph, thienyl, pyridinyl; R<sub>3</sub>, R<sub>4</sub> = (CH<sub>2</sub>)<sub>n</sub>CO<sub>2</sub>R<sub>7</sub>, CH<sub>2</sub>OCH<sub>2</sub>R<sub>8</sub>, (CH<sub>2</sub>)<sub>q</sub>R<sub>9</sub> with proviso, (un)substituted alkyl, etc.; R<sub>7</sub> = (un)substituted cycloalkyl/cyclo/alkyl, (CH<sub>2</sub>)<sub>a</sub>phenyl, (un)saturated heterocyclyl; a = 0-4; R<sub>8</sub> = (un)substituted alkyl, Ph, (un)saturated aromatic heterocyclyl; n = 0-4; q = 0-4; R<sub>9</sub> = (un)substituted cycloalkyl, ph, aromatic heterocyclyl, saturated or partially unsatd. 5-12-membered heterocyclyl; and pharmaceutically acceptable salts thereof] were prepared as cannabinoid 1 (CB<sub>1</sub>) receptor modulators. Thus, reacting (DL)-alaninol with 5,6-Bis(4-chlorophenyl)-3-(tert-butoxycarbonyl)pyrazine-2-carboxylic acid (preparation given), followed by cyclization gave pyrazine II. I are active at the CB<sub>1</sub> receptor (IC<sub>50</sub> < 1 μM), most preferred compds. have IC<sub>50</sub> < 200 nM. For instance, II exhibited an IC<sub>50</sub> (hCB<sub>1</sub>) = 1.8 nM. Thus, I and their pharmaceutical compns. are useful for the treatment of obesity, psychiatric and neurol. disorders (no data).

IT 811436-91-6P, 5,6-Bis(4-chlorophenyl)-3-(4-methyl-4,5-dihydrooxazol-2-yl)pyrazine-2-carboxylic acid tert-butyl ester  
811436-94-9P, 5,6-Bis(4-chlorophenyl)-3-(4-phenyl-4,5-dihydrooxazol-2-yl)pyrazine-2-carboxylic acid tert-butyl ester  
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(drug candidate; preparation of 2,3-substituted 5,6-diaryl-pyrazines as CB<sub>1</sub> modulators)

RN 811436-91-6 CAPLUS

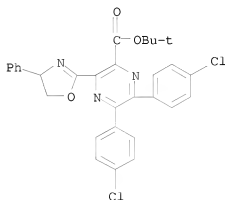
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(4,5-dihydro-4-methyl-2-

oxazolyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 811436-94-9 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(4,5-dihydro-4-phenyl-2-oxazolyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



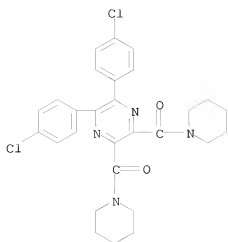
IT 811436-84-7P, 2,3-Bis(4-chlorophenyl)-5,6-bis[(piperidin-1-yl)carbonyl]pyrazine 811436-85-8P, Di(tert-butyl) 5,6-bis(4-chlorophenyl)pyrazine-2,3-dicarboxylate 811436-86-9P, 5,6-Bis(4-chlorophenyl)-3-(4,4-dimethyl-4,5-dihydrooxazol-2-yl)pyrazine-2-carboxylic acid tert-butyl ester 811436-89-2P, 5,6-Bis(4-chlorophenyl)-3-(3-oxa-1-azaspiro[4.4]non-1-en-2-yl)pyrazine-2-carboxylic acid tert-butyl ester 811436-93-8P, 5,6-Bis(4-chlorophenyl)-3-(4-methyloxazol-2-yl)pyrazine-2-carboxylic acid tert-butyl ester 811436-96-1P, 5,6-Bis(4-chlorophenyl)-3-(4-phenyloxazol-2-yl)pyrazine-2-carboxylic acid tert-butyl ester 811436-97-2P, 5,6-Bis(4-chlorophenyl)-3-(5-phenyl-4,5-dihydrooxazol-2-yl)pyrazine-2-carboxylic acid tert-butyl ester 811436-99-4P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(drug candidate; preparation of 2,3-substituted 5,6-diaryl-pyrazines as CB1 modulators)

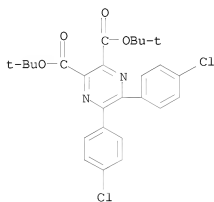
RN 811436-84-7 CAPLUS

CN Piperidine, 1,1'-[[5,6-bis(4-chlorophenyl)-2,3-pyrazinediyl]dicarbonyl]bis- (9CI) (CA INDEX NAME)



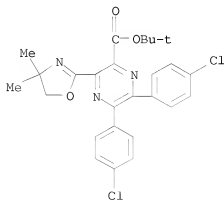
RN 811436-85-8 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 811436-86-9 CAPLUS

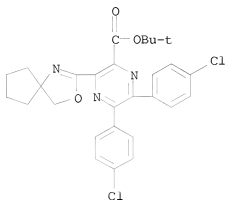
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(4,5-dihydro-4,4-dimethyl-2-oxazolyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)





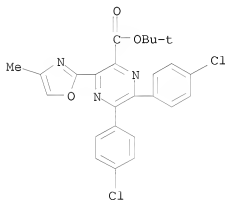
RN 811436-89-2 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(3-oxa-1-azaspiro[4.4]non-1-en-2-yl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



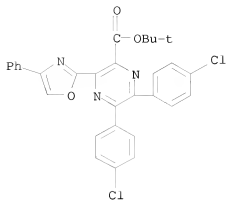
RN 811436-93-8 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(4-methyl-2-oxazolyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



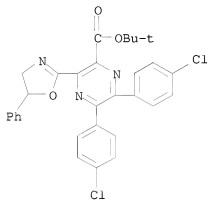
RN 811436-96-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(4-phenyl-2-oxazolyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



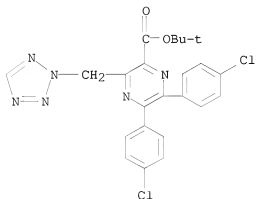
RN 811436-97-2 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(4,5-dihydro-5-phenyl-2-oxazolyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 811436-99-4 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(2H-tetrazol-2-ylmethyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

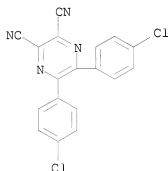


IT 810685-47-3P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarbonitrile  
810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic  
acid 811436-87-0P, 5,6-Bis(4-chlorophenyl)-3-[N-(2-hydroxy-1,1-

dimethylethyl]carbamoyl]pyrazine-2-carboxylic acid tert-butyl ester 811436-88-1P, 5,6-Bis(4-chlorophenyl)-3-(tert-butoxycarbonyl)pyrazine-2-carboxylic acid 811436-90-5P, 5,6-Bis(4-chlorophenyl)-3-[N-[1-(hydroxymethyl)cyclopentyl]carbamoyl]pyrazine-2-carboxylic acid tert-butyl ester 811436-92-7P, 5,6-Bis(4-chlorophenyl)-3-[N-(2-hydroxy-1-methylethyl)carbamoyl]pyrazine-2-carboxylic acid tert-butyl ester 811436-95-0P, 5,6-Bis(4-chlorophenyl)-3-[N-(2-hydroxy-1-phenylethyl)carbamoyl]pyrazine-2-carboxylic acid tert-butyl ester 811436-98-3P, 5,6-Bis(4-chlorophenyl)-3-[N-(2-hydroxy-2-phenylethyl)carbamoyl]pyrazine-2-carboxylic acid tert-butyl ester 811437-00-0P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate 811437-01-1P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate 811437-03-3P, 5,6-Bis(4-chlorophenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylic acid  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of 2,3-substituted 5,6-diaryl-pyrazines as CBI modulators)

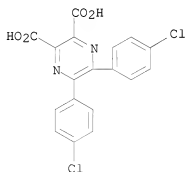
RN 810685-47-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



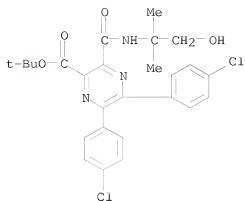
RN 810685-49-5 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



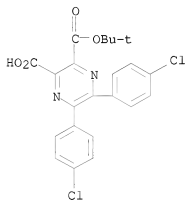
RN 811436-87-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(2-hydroxy-1,1-dimethylethyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



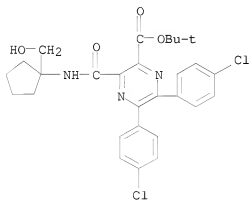
RN 811436-88-1 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, mono(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 811436-90-5 CAPLUS

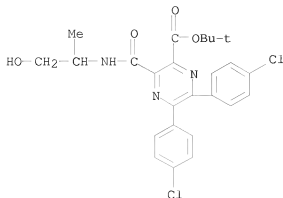
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[1-(hydroxymethyl)cyclopentyl]amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 811436-92-7 CAPLUS

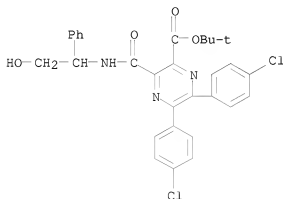
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[2-(hydroxy-1-methylethyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

NAME)



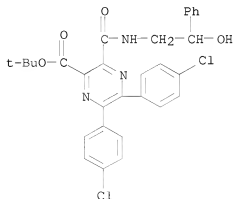
RN 811436-95-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[2-(2-hydroxy-1-phenylethyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



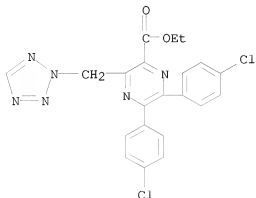
RN 811436-98-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[2-(2-hydroxy-2-phenylethyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



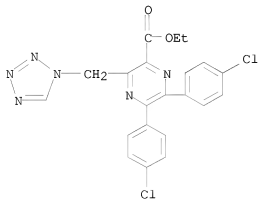
RN 811437-00-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(2H-tetrazol-2-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



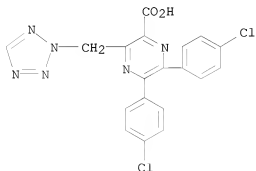
RN 811437-01-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1H-tetrazol-1-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)

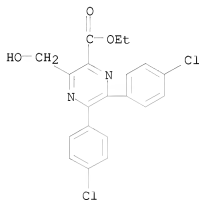


RN 811437-03-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



IT 811437-02-2, Ethyl 5,6-bis(4-chlorophenyl)-3-(hydroxymethyl)pyrazine-2-carboxylate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of 2,3-substituted 5,6-diaryl-pyrazines as CB1 modulators)  
 RN 811437-02-2 CAPLUS  
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(hydroxymethyl)-, ethyl ester (9CI) (CA INDEX NAME)

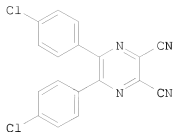


REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

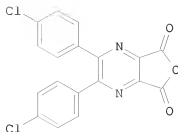
L14 ANSWER 68 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:1127370 CAPLUS  
 DOCUMENT NUMBER: 142:56363  
 TITLE: Preparation of 5,6-bis(4-chlorophenyl)-N-piperidin-1-yl-3-(piperidin-1-ylcarbonyl)pyrazine-2-carboxamide for treatment of obesity  
 INVENTOR(S): Cheng, Leifeng  
 PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.  
 SOURCE: PCT Int. Appl., 24 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004111038	A1	20041223	WO 2004-SE967	20040616
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: GB 2003-14049 A 20030618  
 GI



III



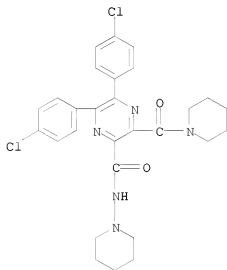
IV

AB 5,6-Bis(4-chlorophenyl)-N-piperidin-1-yl-3-(piperidin-1-yl-carbonyl)pyrazine-2-carboxamide (I) was prepared by reacting 4-ClC<sub>6</sub>H<sub>4</sub>CHO with NaCN/EtOH which gave 1,2-bis(4-chlorophenyl)-2-hydroxyethanone (II). II was oxidized to the ethane-1,2-dione which was condensed with diaminomaleonitrile to give pyrazine III. III was converted to the corresponding 2,3-dicarboxylic acid which was treated with AcCl to give furo[3,4-b]pyrazine-5,7-dione IV. IV was then subsequently reacted with piperidine/MeCN and oxalyl chloride/1-piperidinamine/CH<sub>2</sub>Cl<sub>2</sub> to give the title compound that is intended to be used to treat obesity, psychiatric and neurol. disorders.

IT 810685-52-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of bis(chlorophenyl)piperidinylpyrazinecarboxamide derivative for treating obesity, psychiatric disorders, and neurol. disorders)  
 RN 810685-52-0 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-(1-piperidinylcarbonyl)- (9CI) (CA INDEX NAME)



IT 810685-47-3P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarbonitrile  
 810685-48-4P 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic acid 810685-51-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT



(Reactant or reagent)

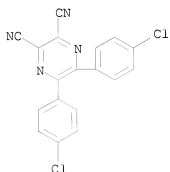
(preparation of bis(chlorophenyl)piperidinylpyrazinecarboxamide derivative

for

treating obesity, psychiatric disorders, and neurol. disorders)

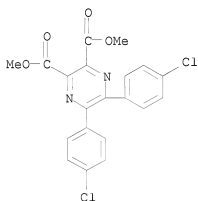
RN 810685-47-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



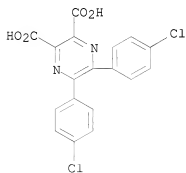
RN 810685-48-4 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, dimethyl ester  
(9CI) (CA INDEX NAME)



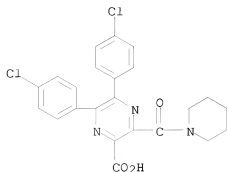
RN 810685-49-5 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



RN 810685-51-9 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1-piperidinylcarbonyl)-  
(9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 69 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:1127366 CAPLUS

DOCUMENT NUMBER: 142:56362

TITLE: Preparation of 3-substituted 5,6-diaryl-pyrazine-2-carboxamide and 2-sulfonamide derivatives as cannabinoid receptor 1 (CB1) modulators

INVENTOR(S): Cheng, Leifeng

PATENT ASSIGNEE(S): Astrazeneca AB, Swed.

SOURCE: PCT Int. Appl., 120 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

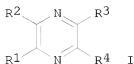
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004111034	A1	200411223	WO 2004-SE970	20040616
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
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AU 2004247616	A1	200411223	AU 2004-247616	20040616
CA 2527035	A1	200411223	CA 2004-2527035	20040616
EP 1638953	A1	20060329	EP 2004-749012	20040616
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
BR 2004011508	A	20060725	BR 2004-11508	20040616
CN 1809554	A	20060726	CN 2004-80017200	20040616
JP 2006527771	T	20061207	JP 2006-517044	20040616
NO 2005005919	A	20060216	NO 2005-5919	20051213
MX 2005PA13711	A	20060308	MX 2005-PA13711	20051215
US 2007093484	A1	20070426	US 2005-560862	20051215
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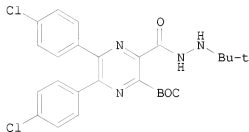
OTHER SOURCE(S):

MARPAT 142:56362

GI

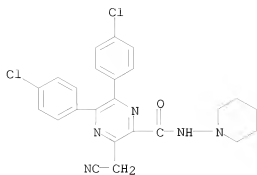


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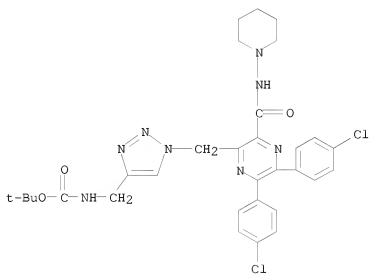
II

- AB Title compds. I [wherein R<sub>1</sub>, R<sub>2</sub> = independently (un)substituted Ph, thienyl, pyridinyl; R<sub>3</sub> = X-Y-NR<sub>5</sub>R<sub>6</sub>; X = absent, CO, or SO<sub>2</sub>; Y = absent, NH optionally substituted by an alkyl group; R<sub>5</sub>, R<sub>6</sub> = independently (un)substituted amino/alkyl, (CH<sub>2</sub>)<sub>r</sub>(phenyl)s, (un)saturated 5-8-membered heterocyclyl; R<sub>5</sub> = H and R<sub>6</sub> = defined above; or R<sub>5</sub>NR<sub>6</sub> = (un)substituted (un)saturated 5-8-membered heterocyclyl; r = 0-4; s = 1 when r = 0, otherwise s = 1 or 2; R<sub>5</sub>NR<sub>6</sub> = (un)substituted (un)saturated 5-8-membered heterocyclyl; R<sub>4</sub> = (CH<sub>2</sub>)<sub>n</sub>CO<sub>2</sub>R<sub>7</sub>; n = 0-4; R<sub>7</sub> = (un)substituted cycloalkyl/cyclo/alkyl, (CH<sub>2</sub>)<sub>n</sub>phenyl, saturated or partially unsatd. 5-8-membered heterocyclyl, CONH<sub>2</sub> and derivs.; n = defined as above; and pharmaceutically acceptable salts thereof] were prepared as cannabinoid 1 (CB<sub>1</sub>) receptor modulators. For example, reacting 3-(tert-butoxycarbonyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylic acid (preparation given) with tert-butylhydrazine hydrochloride gave pyrazine II. I are active at the CB<sub>1</sub> receptor (IC<sub>50</sub> < 1 μM), most preferred compds. have IC<sub>50</sub> < 200 nM. For instance, II exhibited an IC<sub>50</sub> (hCB<sub>1</sub>) = 1.8 nM. Thus, I and their pharmaceutical compns. are useful for the treatment of obesity, psychiatric and neurol. disorders (no data).
- IT 811441-12-0P, 5,6-Bis(4-chlorophenyl)-3-(cyanomethyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-34-6P, tert-Butyl [[1-[[5,6-bis(4-chlorophenyl)-3-[[[(piperidin-1-yl)amino]carbonyl]pyrazin-2-yl]methyl]-1H-1,2,3-triazol-4-yl]methyl]carbamate 811441-35-7P  
 RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (drug candidate; preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide and 2-sulfonamide derivs. as CB<sub>1</sub> modulators)
- RN 811441-12-0 CAPLUS
- CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(cyanomethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



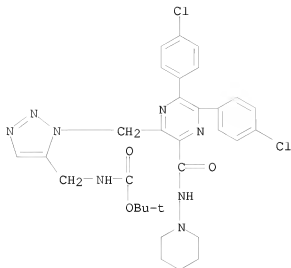
RN 811441-34-6 CAPLUS

CN Carbamic acid, [[1-[[5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]pyrazinyl]methyl]-1H-1,2,3-triazol-4-yl]methyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 811441-35-7 CAPLUS

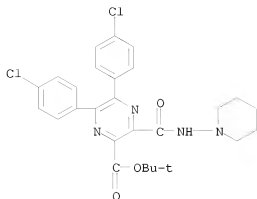
CN Carbamic acid, [[1-[[5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]pyrazinyl]methyl]-1H-1,2,3-triazol-5-yl]methyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IT 811436-92-7P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[(2-hydroxy-1-methylethyl)amino]carbonylpyrazine-2-carboxylate 811440-95-6P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[(piperidin-1-yl)amino]carbonylpyrazine-2-carboxylate 811440-96-7P, Butyl 5,6-bis(4-chlorophenyl)-3-[(piperidin-1-yl)amino]carbonylpyrazine-2-carboxylate 811440-97-8P, Cyclohexyl 5,6-bis(4-chlorophenyl)-3-[(piperidin-1-yl)amino]carbonylpyrazine-2-carboxylate 811440-98-9P, Benzyl 5,6-bis(4-chlorophenyl)-3-[(piperidin-1-yl)amino]carbonylpyrazine-2-carboxylate 811440-99-0P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[(cis-2-hydroxycyclohexyl)amino]carbonylpyrazine-2-carboxylate 811441-00-6P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[(trans-2-hydroxycyclohexyl)amino]carbonylpyrazine-2-carboxylate 811441-01-7P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[2-[4-(trifluoromethyl)phenyl]hydrazino]carbonylpyrazine-2-carboxylate 811441-02-8P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[(morpholin-4-yl)amino]carbonylpyrazine-2-carboxylate 811441-03-9P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[2-(tert-butyl)hydrazino]carbonylpyrazine-2-carboxylate 811441-04-0P, 3-(tert-Butoxymethyl)-5,6-bis(4-chlorophenyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-08-4P, 5,6-Bis(4-chlorophenyl)-3-[(cyclohexylidene)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-17-5P, 5,6-Bis(4-chlorophenyl)-3-(1-methoxyethyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-22-2P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[4,4-difluorocyclohexyl]amino]carbonylpyrazine-2-carboxylate 811441-23-3P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[(pentylamino)carbonylpyrazine-2-carboxylate 811441-24-4P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[1-ethylpropyl]amino]carbonylpyrazine-2-carboxylate 811441-25-5P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[4,4-difluoropiperidin-1-yl]amino]carbonylpyrazine-2-carboxylate 811441-27-7P, 5,6-Bis(4-chlorophenyl)-N-(piperidin-1-yl)-3-[(4-propyl-1H-1,2,3-triazol-1-yl)methyl]pyrazine-2-carboxamide 811441-32-4P, 5,6-Bis(4-chlorophenyl)-3-[[5-(1-hydroxyethyl)-1H-1,2,3-triazol-1-yl]methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-36-8P, 3-[[4-(Aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide hydrochloride 811441-37-9P, 3-[[5-(Aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide hydrochloride 811441-38-0P, 5,6-Bis(4-chlorophenyl)-3-(phenoxy)methyl-N-(piperidin-1-yl)pyrazine-2-carboxamide

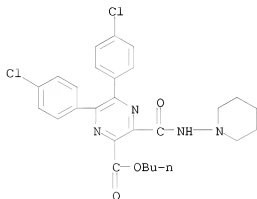
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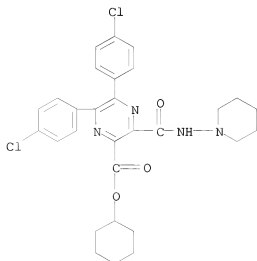
RN 811440-96-7 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]-, butyl ester (9CI) (CA INDEX NAME)



RN 811440-97-8 CAPLUS

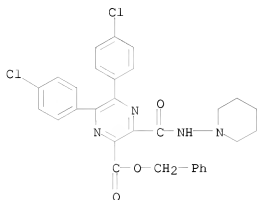
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]-, cyclohexyl ester (9CI) (CA INDEX NAME)





RN 811440-98-9 CAPLUS

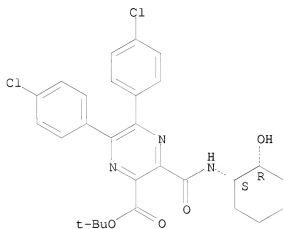
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[1-(piperidinylamino)carbonyl]-, phenylmethyl ester (9CI) (CA INDEX NAME)



RN 811440-99-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(1R,2S)-2-hydroxycyclohexyl]amino]carbonyl]-, 1,1-dimethylethyl ester, rel- (9CI) (CA INDEX NAME)

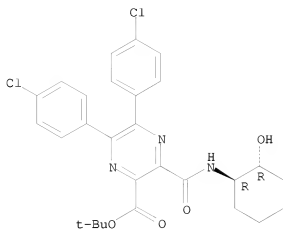
Relative stereochemistry.



RN 811441-00-6 CAPLUS

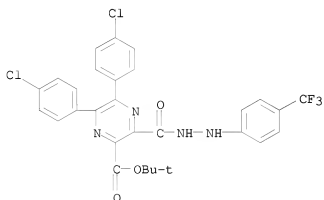
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(1R,2R)-2-hydroxycyclohexyl]amino]carbonyl]-, 1,1-dimethylethyl ester, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



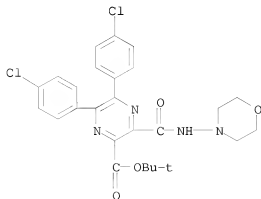
RN 811441-01-7 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, mono(1,1-dimethylethyl) ester, 2-[4-(trifluoromethyl)phenyl]hydrazide (9CI) (CA INDEX NAME)



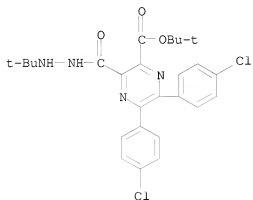
RN 811441-02-8 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(4-morpholinylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



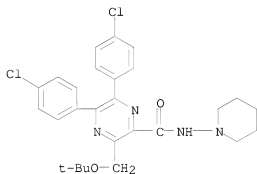
RN 811441-03-9 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, mono(1,1-dimethylethyl) ester, 2-(1,1-dimethylethyl)hydrazide (9CI) (CA INDEX NAME)



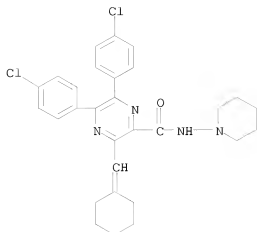
RN 811441-04-0 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(1,1-dimethylethoxy)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



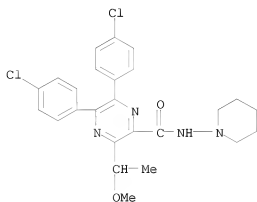
RN 811441-08-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(cyclohexylidenemethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



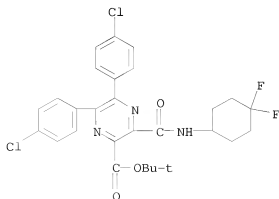
RN 811441-17-5 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(1-methoxyethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



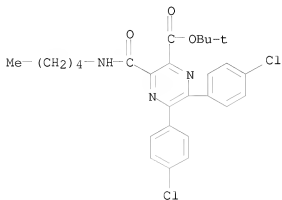
RN 811441-22-2 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(4,4-difluorocyclohexyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



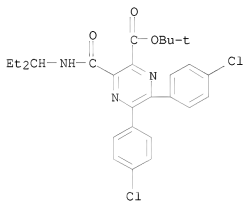
RN 811441-23-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(pentylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



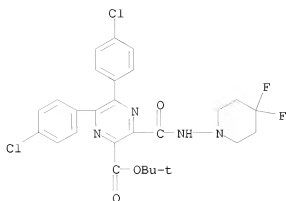
RN 811441-24-4 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[1-ethylpropyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



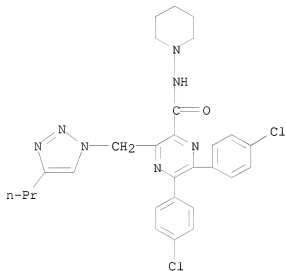
RN 811441-25-5 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[4,4-difluoro-1-piperidinyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



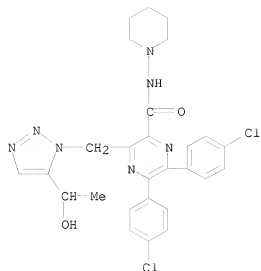
RN 811441-27-7 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-[(4-propyl-1H-1,2,3-triazol-1-yl)methyl]- (9CI) (CA INDEX NAME)



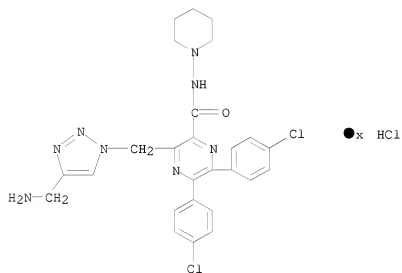
RN 811441-32-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[5-(1-hydroxyethyl)-1H-1,2,3-triazol-1-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



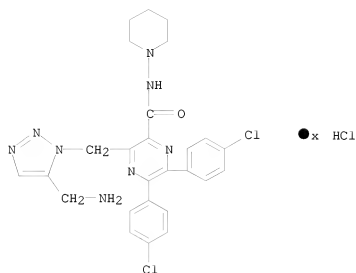
RN 811441-36-8 CAPLUS

CN Pyrazinecarboxamide, 3-[[4-(aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-1-piperidinyl-, hydrochloride (9CI) (CA INDEX NAME)

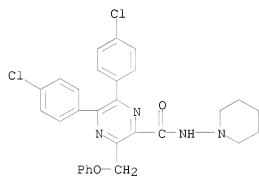


RN 811441-37-9 CAPLUS

CN Pyrazinecarboxamide, 3-[[5-(aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-1-piperidinyl-, hydrochloride (9CI) (CA INDEX NAME)

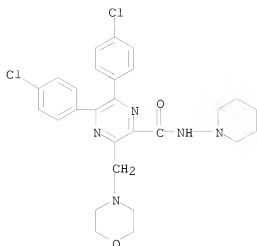


RN 811441-38-0 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(phenoxyethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



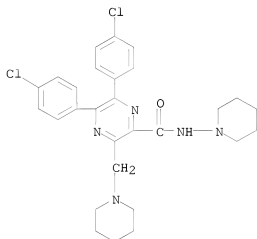
RN 811441-40-4 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(4-morpholinylmethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)





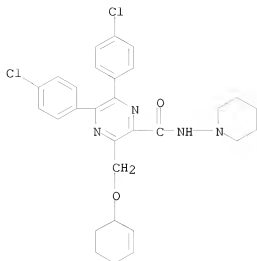
RN 811441-42-6 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-[(1-piperidinyl)methyl]- (9CI) (CA INDEX NAME)



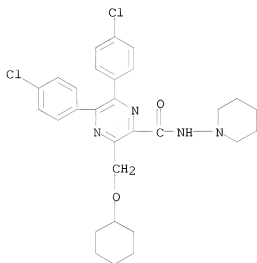
RN 811441-44-8 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(2-cyclohexen-1-yloxy)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



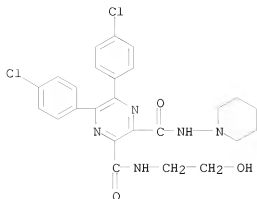
RN 811441-47-1 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(cyclohexyloxy)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



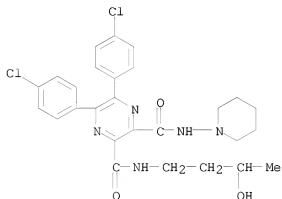
RN 811441-50-6 CAPLUS

CN 2,3-Pyrazinedicarboxamide, 5,6-bis(4-chlorophenyl)-N-(2-hydroxyethyl)-N'-1-piperidinyl- (9CI) (CA INDEX NAME)



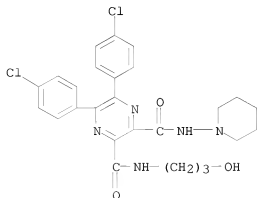
RN 811441-52-8 CAPLUS

CN 2,3-Pyrazinedicarboxamide, 5,6-bis(4-chlorophenyl)-N-(3-hydroxybutyl)-N'-1-piperidinyl- (9CI) (CA INDEX NAME)



RN 811441-53-9 CAPLUS

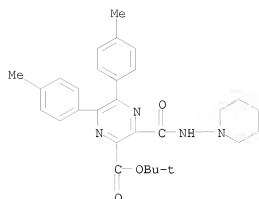
CN 2,3-Pyrazinedicarboxamide, 5,6-bis(4-chlorophenyl)-N-(3-hydroxypropyl)-N'-1-piperidinyl- (9CI) (CA INDEX NAME)



RN 811441-54-0 CAPLUS

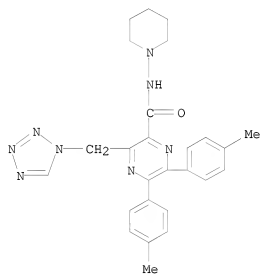
CN Pyrazinedicarboxylic acid, 5,6-bis(4-methylphenyl)-3-[(1-piperidinylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

NAME)



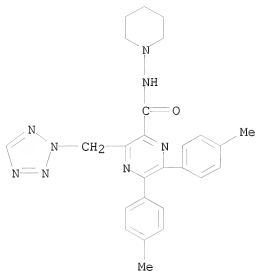
RN 811441-58-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-1-piperidinyl-3-(1H-tetrazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



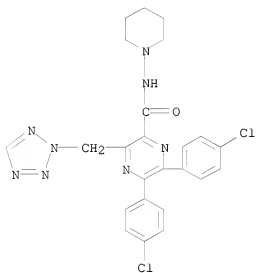
RN 811441-62-0 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-1-piperidinyl-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



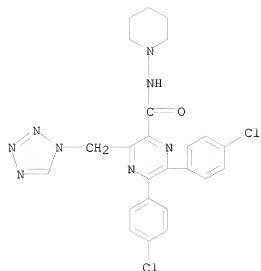
RN 811441-64-2 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



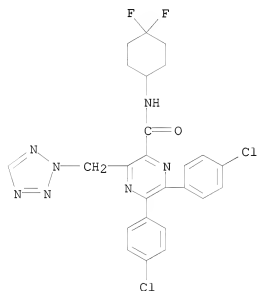
RN 811441-65-3 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-(1H-tetrazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



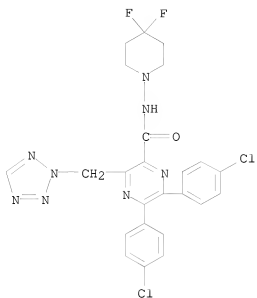
RN 811441-66-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



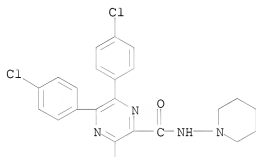
RN 811441-67-5 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluoro-1-piperidinyl)-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



RN 811441-68-6 CAPLUS

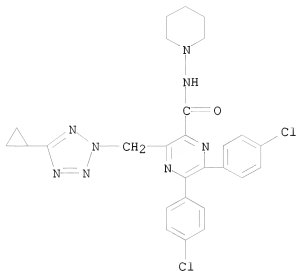
CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(2-methoxyethoxy)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



MeO-CH<sub>2</sub>-CH<sub>2</sub>-O-CH<sub>2</sub>

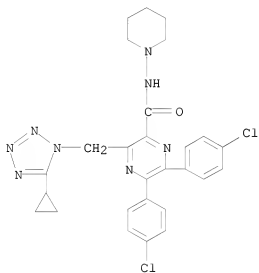
RN 811441-71-1 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-2H-tetrazol-2-yl)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



RN 811441-74-4 CAPLUS

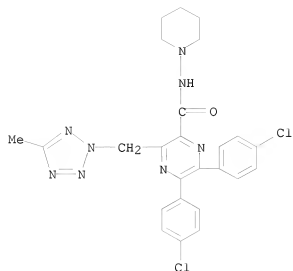
CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-1H-tetrazol-1-yl)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



RN 811441-75-5 CAPLUS

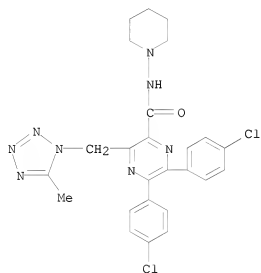
CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(5-methyl-2H-tetrazol-2-yl)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)





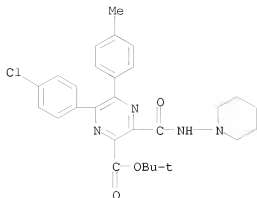
RN 811441-78-8 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(5-methyl-1H-tetrazol-1-yl)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



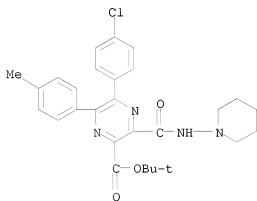
RN 811441-79-9 CAPLUS

CN Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-5-(4-methylphenyl)-3-[(1-piperidinylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



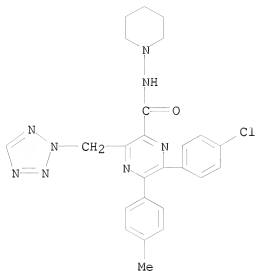
RN 811441-86-8 CAPLUS

CN Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-[(1-piperidinylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



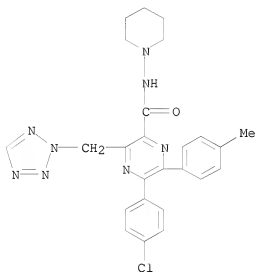
RN 811441-87-9 CAPLUS

CN Pyrazinecarboxamide, 6-(4-chlorophenyl)-5-(4-methylphenyl)-N-1-piperidinyl-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



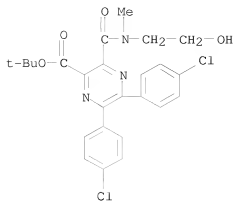
RN 811441-94-8 CAPLUS

CN Pyrazinecarboxamide, 5-(4-chlorophenyl)-6-(4-methylphenyl)-N-1-piperidinyl-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



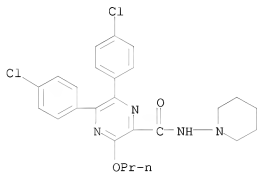
RN 811441-97-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[2-(hydroxyethyl)methylamino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



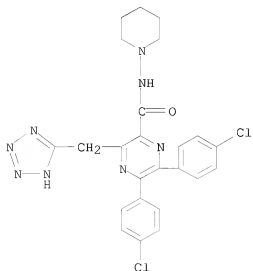
RN 811441-98-2 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-propoxy-  
(9CI) (CA INDEX NAME)



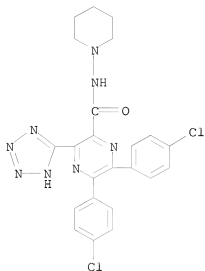
RN 811442-03-2 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-(1H-  
tetrazol-5-ylmethyl)- (9CI) (CA INDEX NAME)



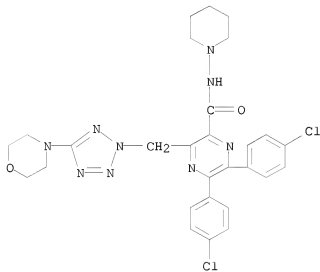
RN 811442-04-3 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-(1H-tetrazol-5-yl)- (9CI) (CA INDEX NAME)



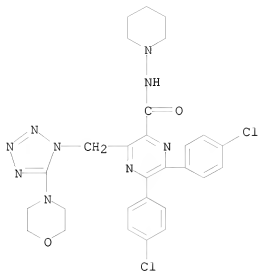
RN 811442-07-6 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[5-(4-morpholinyl)-2H-tetrazol-2-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



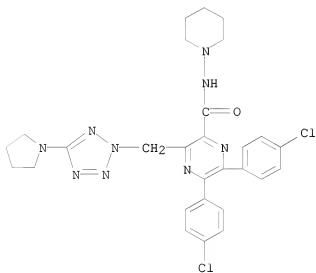
RN 811442-08-7 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[5-(4-morpholinyl)-1H-tetrazol-1-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



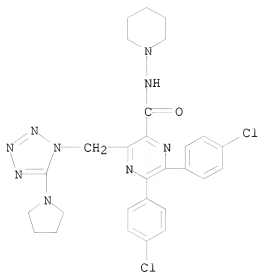
RN 811442-10-1 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-[[5-(1-pyrrolidinyl)-2H-tetrazol-2-yl]methyl]- (9CI) (CA INDEX NAME)



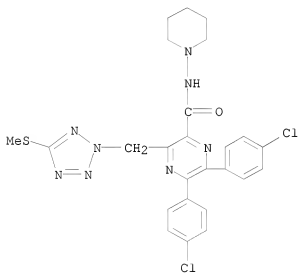
RN 811442-11-2 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-[[5-(1-pyrrolidinyl)-1H-tetrazol-1-yl]methyl]- (9CI) (CA INDEX NAME)



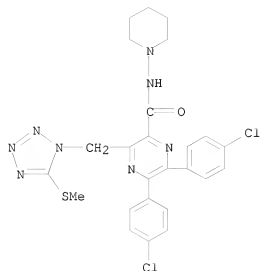
RN 811442-12-3 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[5-(methylthio)-2H-tetrazol-2-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



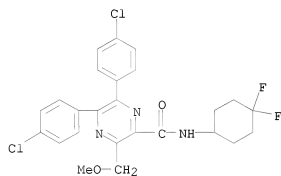
RN 811442-13-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[5-(methylthio)-1H-tetrazol-1-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



RN 811442-14-5 CAPLUS

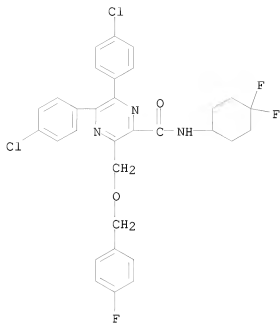
CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-(methoxymethyl)- (9CI) (CA INDEX NAME)



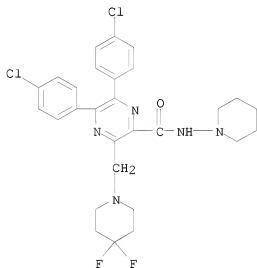
RN 811442-16-7 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-[[[(4-fluorophenyl)methoxy]methyl]- (9CI) (CA INDEX NAME)

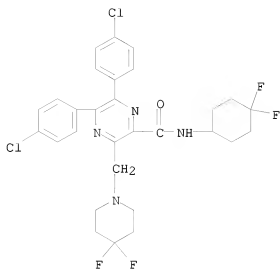




RN 811442-19-0 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(4,4-difluoro-1-piperidinyl)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)

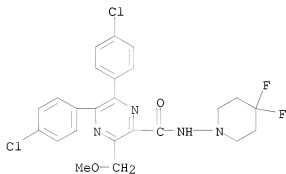


RN 811442-21-4 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-[(4,4-difluoro-1-piperidinyl)methyl]- (9CI) (CA INDEX NAME)



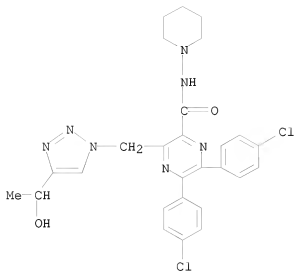
RN 811442-22-5 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluoro-1-piperidinyl)-3-(methoxymethyl)- (9CI) (CA INDEX NAME)



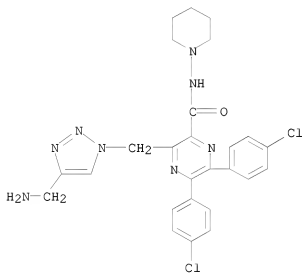
RN 811442-24-7 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[4-(1-hydroxyethyl)-1H-1,2,3-triazol-1-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



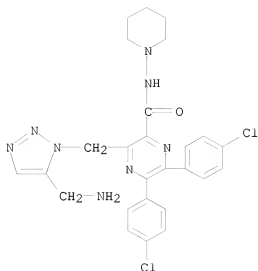
RN 811442-25-8 CAPLUS

CN Pyrazinecarboxamide, 3-[[4-(aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



RN 811442-26-9 CAPLUS

CN Pyrazinecarboxamide, 3-[[5-(aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



IT 52197-13-4P, 5,6-Bis(4-methylphenyl)pyrazine-2,3-dicarbonitrile  
 810685-47-3P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarbonitrile  
 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic acid 811436-88-1P, 3-(tert-Butoxycarbonyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylic acid 811437-00-0P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate 811437-01-1P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate 811437-02-2P, Ethyl 5,6-bis(4-chlorophenyl)-3-(hydroxymethyl)pyrazine-2-carboxylate 811437-03-3P, 5,6-Bis(4-chlorophenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylic acid 811441-05-1P, 5,6-Bis(4-chlorophenyl)-3-(ethoxycarbonyl)pyrazine-2-carboxylic acid 811441-06-2P, Ethyl 3-(tert-butoxymethyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylate 811441-07-3P, 3-(tert-Butoxymethyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylic acid 811441-09-5P, Ethyl 5,6-bis(4-chlorophenyl)-3-formylpyrazine-2-carboxylate 811441-10-8P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(cyclohexylidene)methyl]pyrazine-2-carboxylate 811441-11-9P, 5,6-Bis(4-chlorophenyl)-3-[(cyclohexylidene)methyl]pyrazine-2-carboxylic acid 811441-13-1P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(methylsulfonyl)oxy]methylpyrazine-2-carboxylate 811441-14-2P, Ethyl 5,6-bis(4-chlorophenyl)-3-(cyanomethyl)pyrazine-2-carboxylate 811441-15-3P, 5,6-Bis(4-chlorophenyl)-3-(cyanomethyl)pyrazine-2-carboxylic acid 811441-18-6P, 5,6-Bis(4-chlorophenyl)-3-(1-methoxyethyl)pyrazine-2-carboxylic acid 811441-20-0P, 5,6-Bis(4-chlorophenyl)-3-(methoxymethyl)pyrazine-2-carboxylic acid 811441-21-1P, Methyl 5,6-bis(4-chlorophenyl)-3-(1-methoxyethyl)pyrazine-2-carboxylate 811441-28-8P, Ethyl 3-(azidomethyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylate 811441-29-9P, 3-(Azidomethyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylic acid 811441-30-2P, 3-(Azidomethyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carbonyl chloride 811441-31-3P, 3-(Azidomethyl)-5,6-bis(4-chlorophenyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-39-1P, Ethyl 5,6-bis(4-chlorophenyl)-3-(phenoxymethyl)pyrazine-2-carboxylate 811441-41-5P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(morpholin-4-yl)methyl]pyrazine-2-carboxylate 811441-43-7P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(piperidin-1-yl)methyl]pyrazine-2-carboxylate 811441-45-9P, 5,6-Bis(4-chlorophenyl)-3-[(cyclohex-2-en-1-yl)oxy]methylpyrazine-2-carboxylic acid 811441-46-0P, Methyl 5,6-bis(4-chlorophenyl)-3-

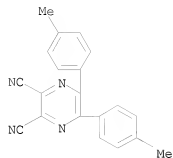
[[cyclohex-2-en-1-yl]oxy]methyl]pyrazine-2-carboxylate  
 811441-48-2P, Ethyl 3-(bromomethyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylate 811441-49-3P, Methyl 5,6-bis(4-chlorophenyl)-3-[(cyclohexyloxy)methyl]pyrazine-2-carboxylate 811441-55-1P, 5,6-Bis(4-methylphenyl)pyrazine-2,3-dicarboxylic acid 811441-57-3P, 3-(tert-Butoxycarbonyl)-5,6-bis(4-methylphenyl)pyrazine-2-carboxylic acid 811441-59-5P, 3-(Ethoxycarbonyl)-5,6-bis(4-methylphenyl)pyrazine-2-carboxylic acid 811441-60-8P, Ethyl 3-(hydroxymethyl)-5,6-bis(4-methylphenyl)pyrazine-2-carboxylate 811441-61-9P, Ethyl 5,6-bis(4-methylphenyl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate 811441-63-1P, Ethyl 5,6-bis(4-methylphenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate 811441-69-7P, 5,6-Bis(4-chlorophenyl)-3-[(2-methoxyethoxy)methyl]pyrazine-2-carboxylic acid 811441-70-0P, Methyl 5,6-bis(4-chlorophenyl)-3-[(2-methoxyethoxy)methyl]pyrazine-2-carboxylate 811441-72-2P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate 811441-73-3P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate 811441-76-6P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(5-methyl-2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate 811441-77-7P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(5-methyl-1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate 811441-80-2P, 5-(4-Chlorophenyl)-6-(4-methylphenyl)pyrazine-2,3-dicarbonitrile 811441-81-3P, 5-(4-Chlorophenyl)-6-(4-methylphenyl)pyrazine-2,3-dicarboxylic acid 811441-82-4P 811441-84-6P, 3-(tert-Butoxycarbonyl)-5-(4-chlorophenyl)-6-(4-methylphenyl)pyrazine-2-carboxylic acid 811441-85-7P, 3-(tert-Butoxycarbonyl)-6-(4-chlorophenyl)-5-(4-methylphenyl)pyrazine-2-carboxylic acid 811441-88-0P, 5-(4-Chlorophenyl)-3-(ethoxycarbonyl)-6-(4-methylphenyl)pyrazine-2-carboxylic acid 811441-89-1P, 6-(4-Chlorophenyl)-3-(ethoxycarbonyl)-5-(4-methylphenyl)pyrazine-2-carboxylic acid 811441-90-4P, Ethyl 6-(4-chlorophenyl)-3-(hydroxymethyl)-5-(4-methylphenyl)pyrazine-2-carboxylate 811441-91-5P, Ethyl 5-(4-chlorophenyl)-3-(hydroxymethyl)-6-(4-methylphenyl)pyrazine-2-carboxylate 811441-92-6P, Ethyl 6-(4-chlorophenyl)-5-(4-methylphenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate 811441-95-9P, Ethyl 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate 811441-99-3P, 5,6-Bis(4-chlorophenyl)-3-hydroxypyrazine-2-carboxylic acid methyl ester 811442-01-0P, 5,6-Bis(4-chlorophenyl)-3-propoxypyrazine-2-carboxylic acid methyl ester 811442-02-1P, 5,6-Bis(4-chlorophenyl)-3-propoxypyrazine-2-carboxylic acid 811442-05-4P, 5,6-Bis(4-chlorophenyl)-3-(1H-tetrazol-5-yl)pyrazine-2-carbonitrile 811442-06-5P, 5,6-Bis(4-chlorophenyl)-3-(1H-tetrazol-5-yl)pyrazine-2-carboxylic acid 811442-09-8P, 5,6-Bis(4-chlorophenyl)-3-(hydroxymethyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide 811442-15-6P, Methyl 5,6-bis(4-chlorophenyl)-3-(methoxymethyl)pyrazine-2-carboxylate 811442-17-8P, 5,6-Bis(4-chlorophenyl)-3-[[4-fluorobenzyl]oxy]methyl]pyrazine-2-carboxylic acid 811442-18-9P, Methyl 5,6-bis(4-chlorophenyl)-3-[[4-fluorobenzyl]oxy]methyl]pyrazine-2-carboxylate 811442-20-3P, Ethyl 5,6-bis(4-chlorophenyl)-3-[[4,4-difluoropiperidin-1-yl)methyl]pyrazine-2-carboxylate

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide and 2-sulfonamide derivs. as CB1 modulators)

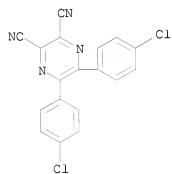
RN 52197-13-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



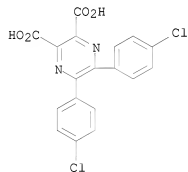
RN 810685-47-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



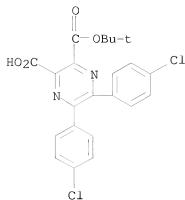
RN 810685-49-5 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



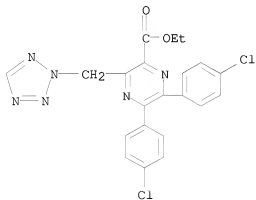
RN 811436-88-1 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, mono(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



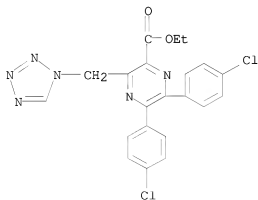
RN 811437-00-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(2H-tetrazol-2-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



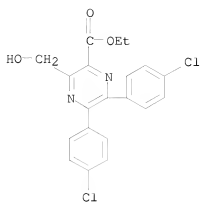
RN 811437-01-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1H-tetrazol-1-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



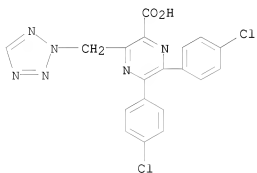
RN 811437-02-2 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(hydroxymethyl)-, ethyl ester (9CI) (CA INDEX NAME)



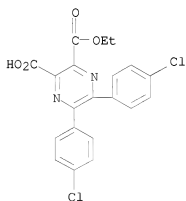
RN 811437-03-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



RN 811441-05-1 CAPLUS

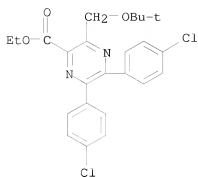
CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, monoethyl ester (9CI) (CA INDEX NAME)



RN 811441-06-2 CAPLUS

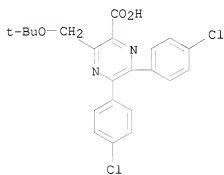
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1,1-dimethylethoxy)methyl]-, ethyl ester (9CI) (CA INDEX NAME)





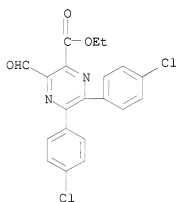
RN 811441-07-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1,1-dimethylethoxy)methyl]- (9CI) (CA INDEX NAME)



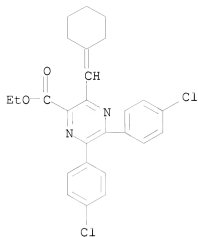
RN 811441-09-5 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-formyl-, ethyl ester (9CI) (CA INDEX NAME)



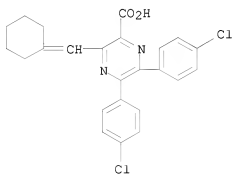
RN 811441-10-8 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(cyclohexylidenemethyl)-, ethyl ester (9CI) (CA INDEX NAME)



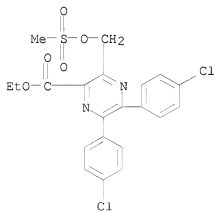
RN 811441-11-9 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(cyclohexylidenemethyl)-  
(9CI) (CA INDEX NAME)



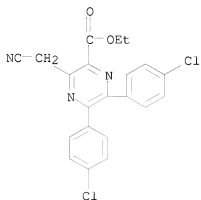
RN 811441-13-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-  
[[methylsulfonyl]oxy]methyl]-, ethyl ester (9CI) (CA INDEX NAME)



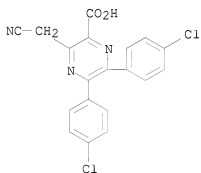
RN 811441-14-2 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(cyanomethyl)-, ethyl ester (9CI) (CA INDEX NAME)



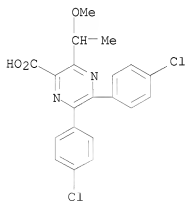
RN 811441-15-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(cyanomethyl)- (9CI)  
(CA INDEX NAME)



RN 811441-18-6 CAPLUS

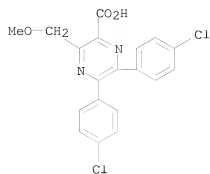
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1-methoxyethyl)- (9CI)  
(CA INDEX NAME)



RN 811441-20-0 CAPLUS

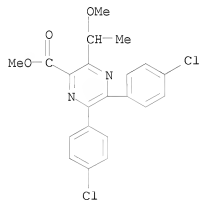
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(methoxymethyl)- (9CI)

(CA INDEX NAME)



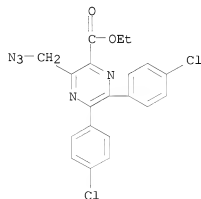
RN 811441-21-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1-methoxyethyl)-, methyl ester (9CI) (CA INDEX NAME)



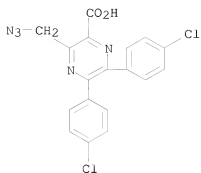
RN 811441-28-8 CAPLUS

CN Pyrazinecarboxylic acid, 3-(azidomethyl)-5,6-bis(4-chlorophenyl)-, ethyl ester (9CI) (CA INDEX NAME)



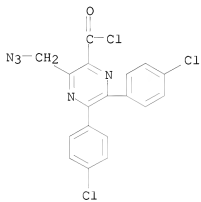
RN 811441-29-9 CAPLUS

CN Pyrazinecarboxylic acid, 3-(azidomethyl)-5,6-bis(4-chlorophenyl)- (9CI) (CA INDEX NAME)



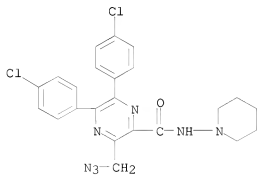
RN 811441-30-2 CAPLUS

CN Pyrazinecarbonyl chloride, 3-(azidomethyl)-5,6-bis(4-chlorophenyl)- (9CI)  
(CA INDEX NAME)



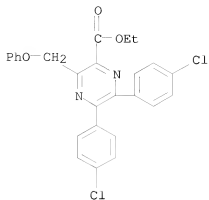
RN 811441-31-3 CAPLUS

CN Pyrazinecarboxamide, 3-(azidomethyl)-5,6-bis(4-chlorophenyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



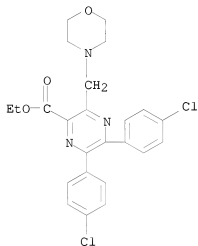
RN 811441-39-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(phenoxyethyl)-, ethyl ester (9CI) (CA INDEX NAME)



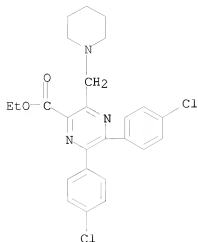
RN 811441-41-5 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(4-morpholinylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



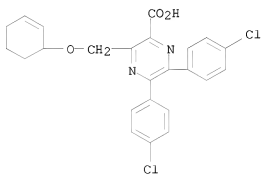
RN 811441-43-7 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1-piperidinylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



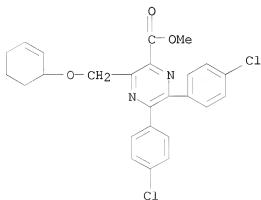
RN 811441-45-9 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(2-cyclohexen-1-yloxy)methyl]- (9CI) (CA INDEX NAME)



RN 811441-46-0 CAPLUS

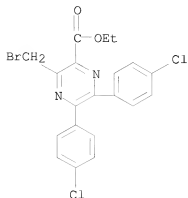
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(2-cyclohexen-1-yloxy)methyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 811441-48-2 CAPLUS

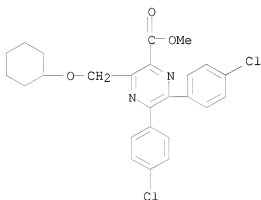
CN Pyrazinecarboxylic acid, 3-(bromomethyl)-5,6-bis(4-chlorophenyl)-, ethyl

ester (9CI) (CA INDEX NAME)



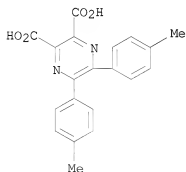
RN 811441-49-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(cyclohexyloxy)methyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 811441-55-1 CAPLUS

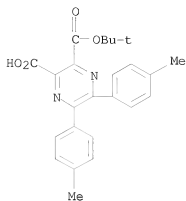
CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)



RN 811441-57-3 CAPLUS

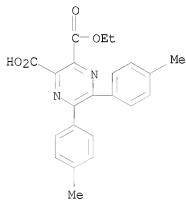
CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-methylphenyl)-, mono(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)





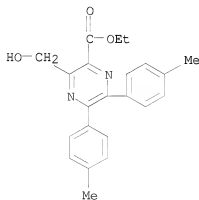
RN 811441-59-5 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-methylphenyl)-, monoethyl ester (9CI) (CA INDEX NAME)



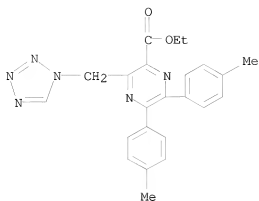
RN 811441-60-8 CAPLUS

CN Pyrazinecarboxylic acid, 3-(hydroxymethyl)-5,6-bis(4-methylphenyl)-, ethyl ester (9CI) (CA INDEX NAME)



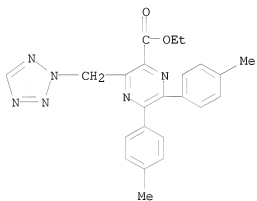
RN 811441-61-9 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)-3-(1H-tetrazol-1-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



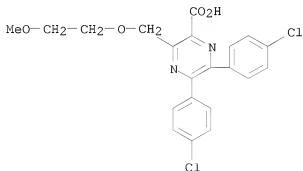
RN 811441-63-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)-3-(2H-tetrazol-2-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



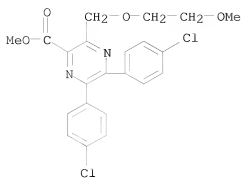
RN 811441-69-7 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(2-methoxyethoxy)methyl]- (9CI) (CA INDEX NAME)



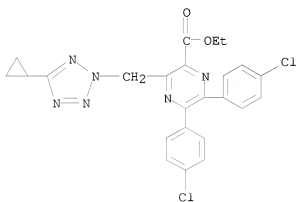
RN 811441-70-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(2-methoxyethoxy)methyl]-, methyl ester (9CI) (CA INDEX NAME)



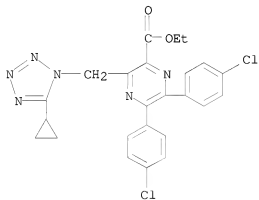
RN 811441-72-2 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-2H-tetrazol-2-yl)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



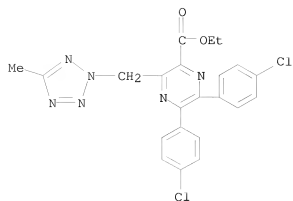
RN 811441-73-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-1H-tetrazol-1-yl)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



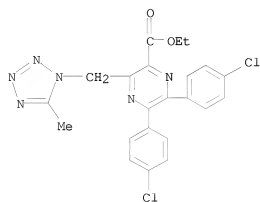
RN 811441-76-6 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(5-methyl-2H-tetrazol-2-yl)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



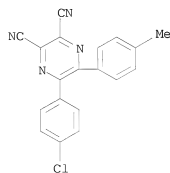
RN 811441-77-7 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(5-methyl-1H-tetrazol-1-yl)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



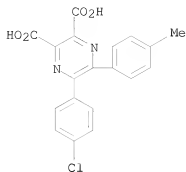
RN 811441-80-2 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)- (CA INDEX NAME)



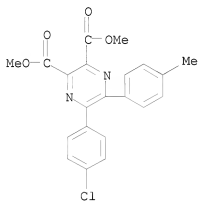
RN 811441-81-3 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)- (CA INDEX NAME)



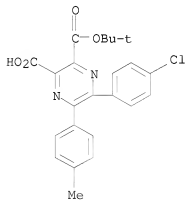
RN 811441-82-4 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-, dimethyl ester (9CI) (CA INDEX NAME)



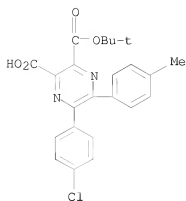
RN 811441-84-6 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-, 3-(1,1-dimethylethyl) ester (CA INDEX NAME)



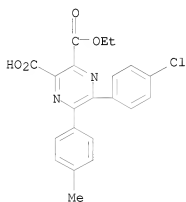
RN 811441-85-7 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-, 2-(1,1-dimethylethyl) ester (CA INDEX NAME)



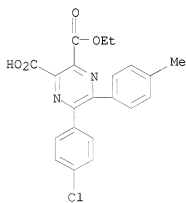
RN 811441-88-0 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-, 3-ethyl ester (CA INDEX NAME)



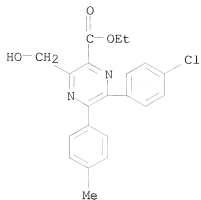
RN 811441-89-1 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-, 2-ethyl ester (CA INDEX NAME)



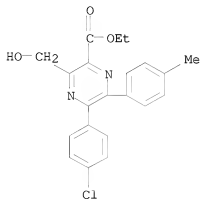
RN 811441-90-4 CAPLUS

CN Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-3-(hydroxymethyl)-5-(4-methylphenyl)-, ethyl ester (9CI) (CA INDEX NAME)



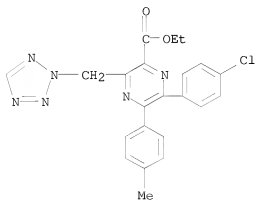
RN 811441-91-5 CAPLUS

CN Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-3-(hydroxymethyl)-6-(4-methylphenyl)-, ethyl ester (9CI) (CA INDEX NAME)



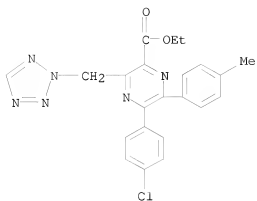
RN 811441-92-6 CAPLUS

CN Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-5-(4-methylphenyl)-3-(2H-tetrazol-2-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



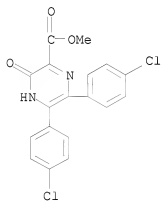
RN 811441-95-9 CAPLUS

CN Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-(2H-tetrazol-2-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



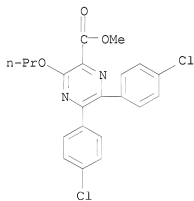
RN 811441-99-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3,4-dihydro-3-oxo-, methyl ester (9CI) (CA INDEX NAME)



RN 811442-01-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-propoxy-, methyl ester (9CI) (CA INDEX NAME)

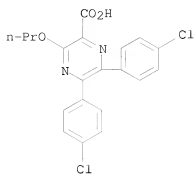


RN 811442-02-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-propoxy- (9CI) (CA

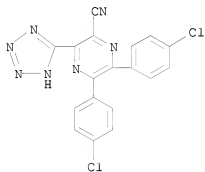


INDEX NAME)



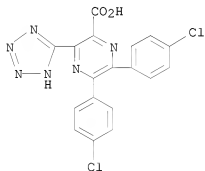
RN 811442-05-4 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-(1H-tetrazol-5-yl)- (9CI)  
(CA INDEX NAME)



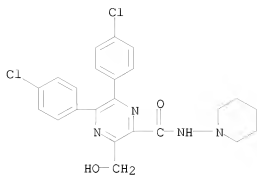
RN 811442-06-5 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1H-tetrazol-5-yl)-  
(9CI) (CA INDEX NAME)



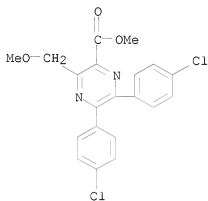
RN 811442-09-8 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(hydroxymethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



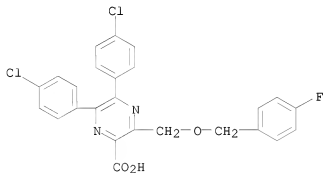
RN 811442-15-6 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(methoxymethyl)-, methyl ester (9CI) (CA INDEX NAME)



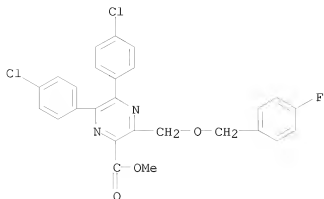
RN 811442-17-8 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[4-(4-fluorophenyl)methoxy]methyl]- (9CI) (CA INDEX NAME)



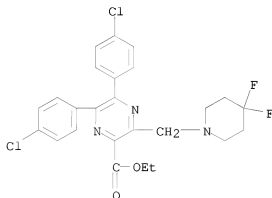
RN 811442-18-9 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[4-(4-fluorophenyl)methoxy]methyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 811442-20-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(4,4-difluoro-1-piperidinyl)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



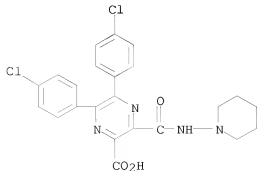
IT 811441-51-7, 5,6-Bis(4-chlorophenyl)-3-[[piperidin-1-yl]amino]carbonylpyrazine-2-carboxylic acid 811442-00-9, 5,6-Bis(4-chlorophenyl)-3-hydroxypyrazine-2-carboxylic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide and 2-sulfonamide derivs. as CB1 modulators)

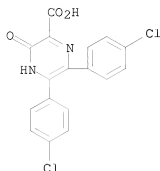
RN 811441-51-7 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]- (9CI) (CA INDEX NAME)



RN 811442-00-9 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3,4-dihydro-3-oxo- (9CI)  
(CA INDEX NAME)

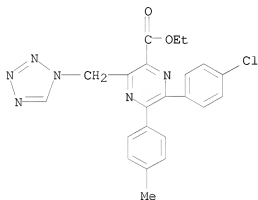


IT 811441-93-7P, Ethyl 6-(4-chlorophenyl)-5-(4-methylphenyl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate 811441-96-0P, Ethyl 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide and 2-sulfonamide derivs. as CBI modulators)

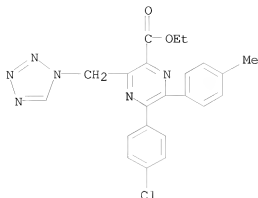
RN 811441-93-7 CAPLUS

CN Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-5-(4-methylphenyl)-3-(1H-tetrazol-1-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 811441-96-0 CAPLUS

CN Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-(1H-tetrazol-1-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)

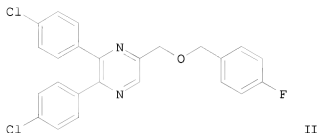
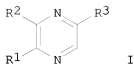


REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 70 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:1127365 CAPLUS  
 DOCUMENT NUMBER: 142:56361  
 TITLE: Preparation of 2-substituted 5,6-diaryl-pyrazine derivatives as cannabinoid receptor 1 (CB1) modulators  
 INVENTOR(S): Cheng, Leifeng; Berggren, Kristina; Elebring, Thomas; Soerensen, Henrik  
 PATENT ASSIGNEE(S): AstraZeneca Ab, Swed.  
 SOURCE: PCT Int. Appl., 44 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004111033	A1	20041223	WO 2004-SE969	20040616
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004247615	A1	20041223	AU 2004-247615	20040616
CA 2527033	A1	20041223	CA 2004-2527033	20040616
EP 1641779	A1	20060405	EP 2004-749011	20040616
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
JP 2006527770	T	20061207	JP 2006-517043	20040616
US 2006135523	A1	20060622	US 2005-561060	20051216
PRIORITY APPLN. INFO.:			GB 2003-14059	A 20030618
			GB 2003-14061	A 20030618
			WO 2004-SE969	W 20040616

OTHER SOURCE(S): MARPAT 142:56361  
 GI

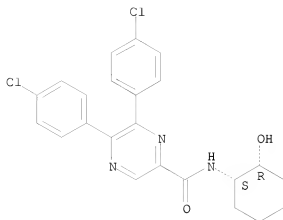


AB Title compds. I [wherein R1, R2 = independently (un)substituted Ph, thienyl, pyridinyl; R3 = (CH<sub>2</sub>)<sub>n</sub>CO<sub>2</sub>R<sub>4</sub>, CH<sub>2</sub>OCH<sub>2</sub>R<sub>8</sub>, CONHR<sub>z</sub>, etc.; R<sub>4</sub> = (un)substituted cycloalkyl/cycloalkyl, Ph, (un)saturated heterocyclyl; R<sub>8</sub> = (un)substituted alkyl; R<sub>z</sub> = piperidinyl substituted by an alkanoyl group; and pharmaceutically acceptable salts thereof] were prepared as cannabinoid 1 (CB1) receptor modulators. For example, reacting [5,6-Bis(4-chlorophenyl)pyrazine-2-yl]methanol (preparation given) with 4-fluorobenzyl bromide gave II in 93% yield. I are active at the CB1 receptor (IC<sub>50</sub> < 1 μM), most preferred compds. have IC<sub>50</sub> < 200 nM. Thus, I and their pharmaceutical compns. are useful for the treatment of obesity, psychiatric and neurol. disorders (no data).

IT 810675-52-6P, 5,6-Bis(4-chlorophenyl)-N-(cis-2-hydroxycyclohexyl)pyrazine-2-carboxamide 810675-53-7P, 5,6-Bis(4-chlorophenyl)-N-(trans-2-hydroxycyclohexyl)pyrazine-2-carboxamide 810675-54-8P, 5,6-Bis(4-chlorophenyl)-N-(trans-4-hydroxycyclohexyl)pyrazine-2-carboxamide 810675-55-9P, 5,6-Bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)pyrazine-2-carboxamide 810675-59-3P, N-(1-Acetylpiperidin-3-yl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxamide 810675-60-6P, tert-Butyl 5,6-bis(4-chlorophenyl)pyrazine-2-carboxylate 810675-61-7P, [5,6-Bis(4-chlorophenyl)pyrazine-2-yl](1,3-dihydroisindol-2-yl)methanone 810675-62-8P, 2,3-Bis(4-chlorophenyl)-5-[[[(4-fluorobenzyl)oxy]methyl]pyrazine 810675-63-9P, 2,3-Bis(4-chlorophenyl)-5-[[[(piperidin-1-yl)oxy]carbonyl]pyrazine 810675-64-0P 810675-65-1P, 5,6-Bis(4-chlorophenyl)-N-(4-hydroxypiperidin-1-yl)pyrazine-2-carboxamide  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(drug candidate; preparation of 5,6-diaryl-pyrazine as CB1 modulators)  
 RN 810675-52-6 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-[(1R,2S)-2-hydroxycyclohexyl]-, rel- (9CI) (CA INDEX NAME)

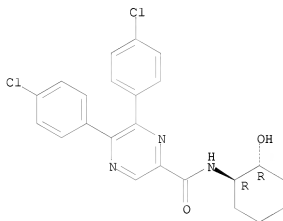
Relative stereochemistry.



RN 810675-53-7 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-[(1R,2R)-2-hydroxycyclohexyl]-, rel- (9CI) (CA INDEX NAME)

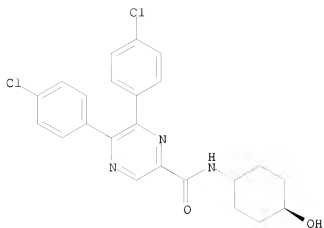
Relative stereochemistry.



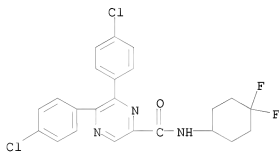
RN 810675-54-8 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(trans-4-hydroxycyclohexyl)- (9CI) (CA INDEX NAME)

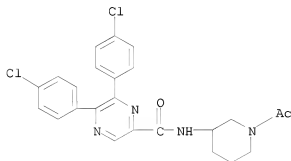
Relative stereochemistry.



RN 810675-55-9 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-  
 (9CI) (CA INDEX NAME)

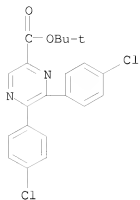


RN 810675-59-3 CAPLUS  
 CN Pyrazinecarboxamide, N-(1-acetyl-3-piperidiny)-5,6-bis(4-chlorophenyl)-  
 (9CI) (CA INDEX NAME)



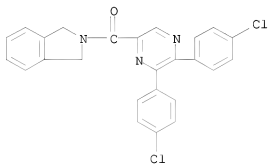
RN 810675-60-6 CAPLUS  
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-, 1,1-dimethylethyl ester  
 (9CI) (CA INDEX NAME)





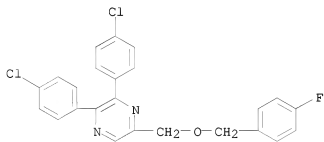
RN 810675-61-7 CAPLUS

CN 1H-Isoindole, 2-[[5,6-bis(4-chlorophenyl)pyrazinyl]carbonyl]-2,3-dihydro-(9CI) (CA INDEX NAME)



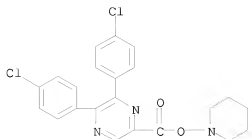
RN 810675-62-8 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[[ (4-fluorophenyl)methoxy]methyl]- (CA INDEX NAME)

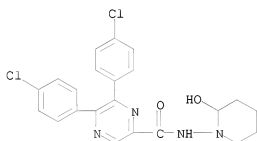


RN 810675-63-9 CAPLUS

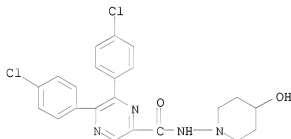
CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[[ (1-piperidinyloxy)carbonyl]- (9CI) (CA INDEX NAME)



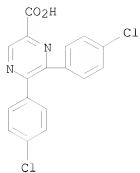
RN 810675-64-0 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(2-hydroxy-1-piperidinyl)-  
 (9CI) (CA INDEX NAME)



RN 810675-65-1 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4-hydroxy-1-piperidinyl)-  
 (9CI) (CA INDEX NAME)

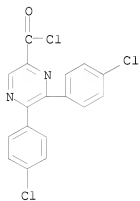


IT 548760-13-0P, 5,6-Bis(4-chlorophenyl)pyrazine-2-carboxylic acid  
 810675-50-4P, 5,6-Bis(4-chlorophenyl)pyrazine-2-carbonyl chloride  
 810675-51-5P, [5,6-Bis(4-chlorophenyl)pyrazin-2-yl]methanol  
 810675-57-1P, tert-Butyl 3-[[[5,6-bis(4-chlorophenyl)pyrazin-2-yl]carbonyl]amino]piperidine-1-carboxylate 810675-58-2P,  
 5,6-Bis(4-chlorophenyl)-N-(piperidin-3-yl)pyrazine-2-carboxamide  
 monohydrochloride  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (intermediate; preparation of 5,6-diaryl-pyrazine as CB1 modulators)  
 RN 548760-13-0 CAPLUS  
 CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



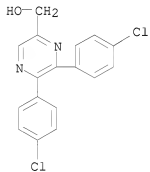
RN 810675-50-4 CAPLUS

CN Pyrazinecarbonyl chloride, 5,6-bis(4-chlorophenyl)- (9CI) (CA INDEX NAME)



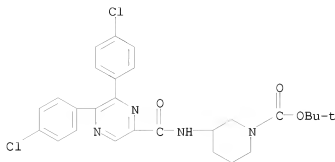
RN 810675-51-5 CAPLUS

CN Pyrazinemethanol, 5,6-bis(4-chlorophenyl)- (9CI) (CA INDEX NAME)

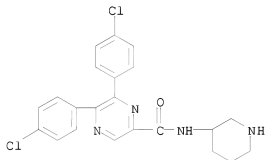


RN 810675-57-1 CAPLUS

CN 1-Piperidinecarboxylic acid, 3-[[[5,6-bis(4-chlorophenyl)pyrazinyl]carbonyl]amino]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



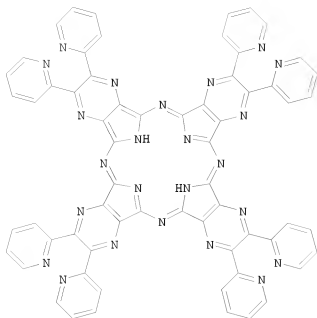
RN 810675-58-2 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-3-piperidinyl-,  
 monohydrochloride (9CI) (CA INDEX NAME)



● HCl

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 71 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:1033699 CAPLUS  
 DOCUMENT NUMBER: 142:176813  
 TITLE: Tetra-2,3-pyrazinoporphyrazines with Externally  
 Appended Pyridine Rings. 1. Tetrakis-2,3-[5,6-di(2-  
 pyridyl)pyrazinolporphyrazine: A New Macrocyclic with  
 Remarkable Electron-Deficient Properties  
 Donzello, Maria Pia; Ou, Zhongping; Monacelli,  
 Fabrizio; Ricciardi, Giampaolo; Rizzoli, Corrado;  
 Ercolani, Claudio; Kadish, Karl M.  
 CORPORATE SOURCE: Dipartimento di Chimica, Università degli Studi di  
 Roma La Sapienza, Rome, I-00185, Italy  
 SOURCE: Inorganic Chemistry (2004), 43(26), 8626-8636  
 CODEN: INOCAJ; ISSN: 0020-1669  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 142:176813  
 GI



I

AB Pyrazinoporphyrazine macrocycle I is prepared in two steps from 1,2-di(2-pyridyl)ethanedione and 2,3-diaminomaleonitrile; the UV/visible spectra and their dependence on solvent, the equilibrium between neutral and doubly deprotonated I, the electrochem., and the magnetic susceptibility of I are determined. Cyclocondensation of 1,2-di(2-pyridyl)ethanedione and 2,3-diaminomaleonitrile in THF yields the intermediate 5,6-bis(2-pyridinyl)-2,3-pyrazinedicarbonitrile; direct cyclotetramerization of the pyrazinedicarbonitrile in the presence of DBU yields I. UV-vis spectra of I in two nondonor solvents (CHCl<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>), a slightly basic solvent (pyridine), and an acidic solvent (CH<sub>3</sub>COOH) are obtained; mol. aggregation and colloidal dispersions occur which dissociate over time to give clear solns. of monomeric I in either its neutral form or (in pyridine) its doubly-deprotonated form. Titration of I in CH<sub>2</sub>Cl<sub>2</sub> with tetrabutylammonium hydroxide shows the loss of two protons from the macrocyclic core and quant. conversion of I to its doubly-deprotonated anion. I and its doubly-deprotonated anion exhibit identical electrochem. behavior, consistent with a conversion of the dianion to the neutral porphyrazine prior to electroredn. via four reversible one-electron transfer steps; electrochem. oxidation of I is not observed. I is diamagnetic

at room temperature. The structure of 5,6-bis(2-pyridinyl)-2,3-pyrazinedicarbonitrile is determined by X-ray crystallog.

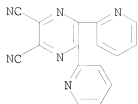
IT 118553-90-5P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(crystal structure; preparation of a pyrazinoporphyrazine macrocycle by cyclocondensation of bis(2-pyridyl)ethanedione and diaminomaleonitrile followed by cyclotetramerization of the pyrazinedicarbonitrile intermediate)

RN 118553-90-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 72 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:1033698 CAPLUS

DOCUMENT NUMBER: 142:189534

TITLE: Tetra-2,3-pyrazinoporphyrazines with Externally Appended Pyridine Rings. 2. Metal Complexes of Tetrakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrazine: Linear and Nonlinear Optical Properties and Electrochemical Behavior

AUTHOR(S): Donzello, Maria Pia; Ou, Zoungping; Dini, Danilo; Meneghetti, Moreno; Ercolani, Claudio; Kadish, Karl M.

CORPORATE SOURCE: Dipartimento di Chimica, Universita degli Studi di Roma La Sapienza, Rome, I-00185, Italy

SOURCE: Inorganic Chemistry (2004), 43(26), 8637-8648

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 142:189534

AB Metal complexes of tetrakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrazine, [Py8TPyzPzH2], [Py8TPyzPzM]·xH2O (M = MgII(H2O), MnII, CoII, CuII, ZnII; x = 3-8) were synthesized by reaction of the free-base macrocycle with the appropriate metal acetate in pyridine or DMSO under mild conditions. Clathrated H2O and retained pyridine mols. for the MnII and CoII species are easily eliminated by heating under vacuum, the H2O mols. being recovered by exposure of the unsolvated macrocycles to air. Magnetic susceptibility measurements and EPR spectra of the materials in the solid state provide basic information on the spin state of the CuII, CoII, and MnII species. Colloidal solns. caused by mol. aggregation are formed in nonodor solvents (CH2Cl2, CHCl3), a moderately basic solvent (pyridine), and an acidic solvent (CH3COOH), with the extent of aggregation depending on the specific solvent and the central metal ion. UV-visible spectral monitoring of the solns. after preparation indicates that disaggregation systematically occurs as a function of time leading ultimately to the formation of clear solns. containing the monomeric form of the porphyrazine. Cyclic voltammetry and thin-layer spectroelectrochem. show that each compound with an electroinactive metal ion undergoes four reversible 1-electron redns., giving the neg. charged species [Py8TPyzPzM]n- (n = 1-4). The stepwise uptake of four electrons is consistent with a ring-centered reduction, but in the case of the Co complex a metal-centered (CoII → CoI) reduction occurs in the 1st process and only three addnl. redns. are observed. No oxidns. are observed in pyridine or CH2Cl2 containing 0.1M tetrabutylammonium perchlorate (TBAP). The nonlinear optical properties (NLO) of [Py8TPyzPzM] (M = 2H1, CuII, ZnII, MgII(H2O)) also were examined with nanosecond pulses at 532 nm in DMSO solution. Reverse saturable absorption is shown by all of the [Py8TPyzPzM] species, which exhibit distinct behavior depending on the nature of M and extent of aggregation.

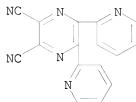
IT 118553-90-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(for preparation of magnesium and transition metal  
tetrakis(pyridyl)pyrazino]porphrazine complex hydrates)

RN 118553-90-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 73 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:1012905 CAPLUS

DOCUMENT NUMBER: 142:448267

TITLE: Synthesis and spectral properties of phenylene  
dendrimers based on porphyrazines

AUTHOR(S): Jaung, Jae-yun

CORPORATE SOURCE: Department of Polymer & Textile Engineering, Hanyang  
University, Seoul, 133-791, S. Korea

SOURCE: Bulletin of the Korean Chemical Society (2004),  
25(10), 1453-1454

CODEN: BKCSDE; ISSN: 0253-2964

PUBLISHER: Korean Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 142:448267

AB The synthesis of aromatic 2,3-dicyanopyrazine pyrazine derivs. and their  
conversion to tetrapyrazinoporphyrazinato copper complexes having four  
triphenylene branches with increased solubility in organic solvents is  
reported.

The mol. aggregation and UV-visible spectra of the complexes in relation  
to solvent polarity were examined. These phthalocyanine dye analogs have  
potential as nonlinear optical materials.

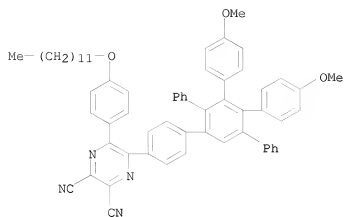
IT 851085-25-1P 851085-26-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)

(intermediate; preparation and spectral properties of triphenylene-branched  
tetrapyrazinoporphyrazinato copper complexes)

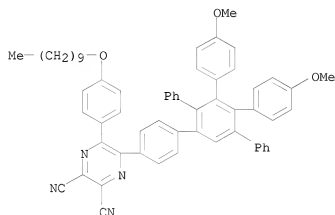
RN 851085-25-1 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-  
phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(dodecyloxy)phenyl]- (9CI) (CA  
INDEX NAME)



RN 851085-26-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(decyloxy)phenyl]- (9CI) (CA INDEX NAME)



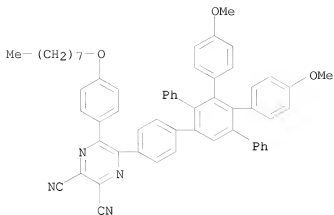
IT 874913-81-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and spectral properties of triphenylene-branched tetrapyrazinoporphyrazinato copper complexes)

RN 874913-81-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(octyloxy)phenyl]- (9CI) (CA INDEX NAME)



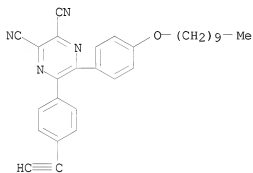


IT 484678-60-6 851085-27-3

RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; preparation and spectral properties of  
triphenylene-branched tetrapyrazinoporphyrazinato copper complexes)

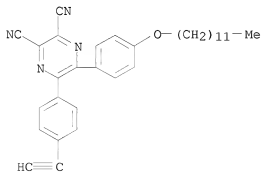
RN 484678-60-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-(4-ethynylphenyl)-  
(CA INDEX NAME)



RN 851085-27-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(dodecyloxy)phenyl]-6-(4-ethynylphenyl)-  
(CA INDEX NAME)



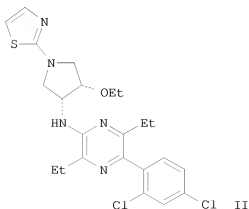
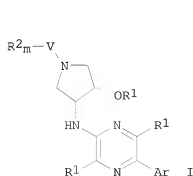
REFERENCE COUNT:

15

THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 74 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:996174 CAPLUS  
 DOCUMENT NUMBER: 141:410966  
 TITLE: Preparation of pyrazineamine derivative as CRF1  
 receptor antagonists  
 INVENTOR(S): Corbett, Jeffrey W.; Ennis, Michael D.; Frank,  
 Kristine E.; Fu, Jian-Min; Hoffman, Robert L.;  
 Verhoest, Patrick R.  
 PATENT ASSIGNEE(S): Pharmacia & Upjohn Company, USA  
 SOURCE: PCT Int. Appl., 57 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004099201	A1	20041118	WO 2004-IB1553	20040505
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2524519	A1	20041118	CA 2004-2524519	20040505
EP 1625125	A1	20060215	EP 2004-731232	20040505
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
BR 2004009505	A	20060418	BR 2004-9505	20040505
JP 2006525993	T	20061116	JP 2006-506620	20040505
US 2005038040	A1	20050217	US 2004-840485	20040506
US 7250418	B2	20070731		
MX 2005PA12082	A	20060222	MX 2005-PA12082	20051109
PRIORITY APPLN. INFO.:			US 2003-469486P	P 20030509
			WO 2004-IB1553	W 20040505
OTHER SOURCE(S):		MARPAT 141:410966		
GI				



AB Title compds. represented by the formula I [wherein Ar = (un)substituted (hetero)aryl; V = (un)substituted heteroaryl or phenyl; R1 = independently H, (un)substituted (cyclo)alkyl, haloalkyl, (hetero)aryl; R2 = independently H, halo, NO<sub>2</sub>, oxy(halo)alkyl, etc.; m = 0-5; or stereoisomers, and pharmaceutically acceptable salts or prodrugs thereof] were prepared as CRF1 receptor antagonists. For example, II was given in a multi-step synthesis starting from benzyl 3-pyrroline-1-carboxylate. I and their pharmaceutical compns. are useful as CRF1 receptor antagonists for the treatment of various disorders that are associated with CRF or CRF1 receptors in a warm-blooded animal, particularly a mammal, and more particularly a human, such as anxiety-related disorders (no data).

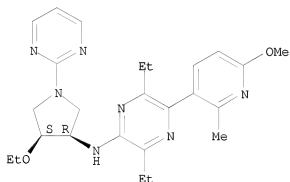
IT 793675-67-9P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(preparation of N-pyrrolidinyl phenylpyrazine-2-amine derivative as CRF1 receptor antagonists)

RN 793675-67-9 CAPLUS

CN Pyrazinamine, N-[(3R,4S)-4-ethoxy-1-(2-pyrimidinyl)-3-pyrrolidinyl]-3,6-diethyl-5-(6-methoxy-2-methyl-3-pyridinyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 793675-68-0P 793675-69-1P 793675-70-4P

793675-71-5P 793675-72-6P 793675-82-8P

793675-83-9P 793675-84-0P 793675-85-1P

793675-86-2P 793675-87-3P

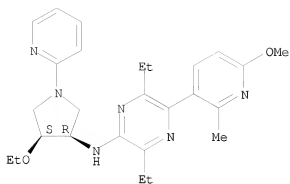
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of N-pyrrolidinyl phenylpyrazine-2-amine derivative as CRF1 receptor antagonists)

RN 793675-68-0 CAPLUS

CN Pyrazinamine, N-[(3R,4S)-4-ethoxy-1-(2-pyridinyl)-3-pyrrolidinyl]-3,6-diethyl-5-(6-methoxy-2-methyl-3-pyridinyl)- (9CI) (CA INDEX NAME)

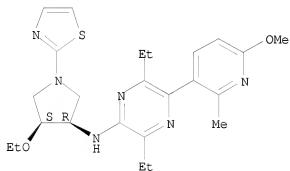
Absolute stereochemistry.



RN 793675-69-1 CAPLUS

CN Pyrazinamine, N-[(3R,4S)-4-ethoxy-1-(2-thiazolyl)-3-pyrrolidinyl]-3,6-diethyl-5-(6-methoxy-2-methyl-3-pyridinyl)- (9CI) (CA INDEX NAME)

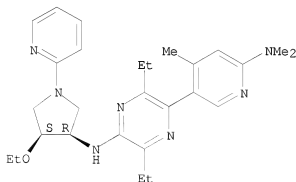
Absolute stereochemistry.



RN 793675-70-4 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-N-[(3R,4S)-4-ethoxy-1-(2-pyridinyl)-3-pyrrolidinyl]-3,6-diethyl- (9CI) (CA INDEX NAME)

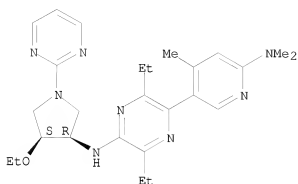
Absolute stereochemistry.



RN 793675-71-5 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-N-[(3R,4S)-4-ethoxy-1-(2-pyrimidinyl)-3-pyrrolidinyl]-3,6-diethyl- (9CI) (CA INDEX NAME)

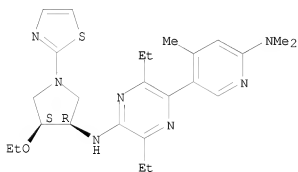
Absolute stereochemistry.



RN 793675-72-6 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-N-[(3R,4S)-4-ethoxy-1-(2-thiazolyl)-3-pyrrolidinyl]-3,6-diethyl- (9CI) (CA INDEX NAME)

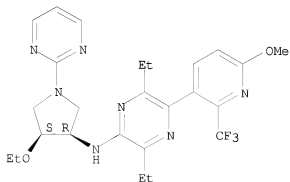
Absolute stereochemistry.



RN 793675-82-8 CAPLUS

CN Pyrazinamine, N-[(3R,4S)-4-ethoxy-1-(2-pyrimidinyl)-3-pyrrolidinyl]-3,6-diethyl-5-[6-methoxy-2-(trifluoromethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

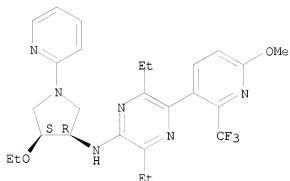


RN 793675-83-9 CAPLUS

CN Pyrazinamine, N-[(3R,4S)-4-ethoxy-1-(2-pyridinyl)-3-pyrrolidinyl]-3,6-diethyl-5-[6-methoxy-2-(trifluoromethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)

NAME)

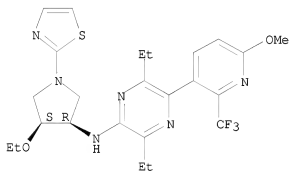
Absolute stereochemistry.



RN 793675-84-0 CAPLUS

CN Pyrazinamine, N-[(3R,4S)-4-ethoxy-1-(2-thiazolyl)-3-pyrrolidinyl]-3,6-diethyl-5-[6-methoxy-2-(trifluoromethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)

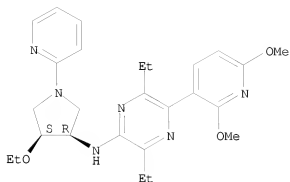
Absolute stereochemistry.



RN 793675-85-1 CAPLUS

CN Pyrazinamine, 5-(2,6-dimethoxy-3-pyridinyl)-N-[(3R,4S)-4-ethoxy-1-(2-pyridinyl)-3-pyrrolidinyl]-3,6-diethyl-, monohydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.

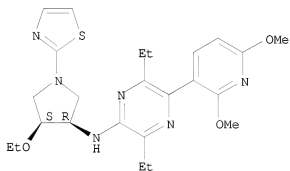


● HCl

RN 793675-86-2 CAPLUS

CN Pyrazinamine, 5-(2,6-dimethoxy-3-pyridinyl)-N-[(3R,4S)-4-ethoxy-1-(2-thiazolyl)-3-pyrrolidinyl]-3,6-diethyl- (9CI) (CA INDEX NAME)

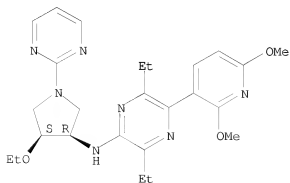
Absolute stereochemistry.



RN 793675-87-3 CAPLUS

CN Pyrazinamine, 5-(2,6-dimethoxy-3-pyridinyl)-N-[(3R,4S)-4-ethoxy-1-(2-pyrimidinyl)-3-pyrrolidinyl]-3,6-diethyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 793675-89-5P 793675-90-8P 793675-92-0P

793675-93-1P 793675-94-2P 793675-95-3P

793675-97-5P 793675-98-6P

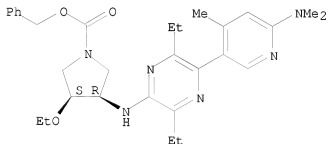
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of N-pyrrolidinyl phenylpyrazine-2-amine derivative as CRF1 receptor antagonists)

RN 793675-89-5 CAPLUS

CN 1-Pyrrolidinecarboxylic acid, 3-[[5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-3,6-diethylpyrazinyl]amino]-4-ethoxy-, phenylmethyl ester, (3R,4S)- (9CI) (CA INDEX NAME)

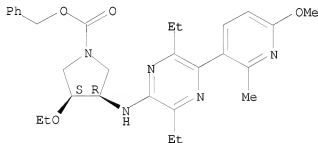
Absolute stereochemistry.



RN 793675-90-8 CAPLUS

CN 1-Pyrrolidinecarboxylic acid, 3-[[[3,6-diethyl-5-(6-methoxy-2-methyl-3-pyridinyl)pyrazinyl]amino]-4-ethoxy-, phenylmethyl ester, (3R,4S)- (9CI) (CA INDEX NAME)

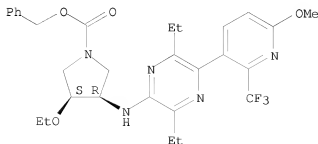
Absolute stereochemistry.



RN 793675-92-0 CAPLUS

CN 1-Pyrrolidinecarboxylic acid, 3-[[[3,6-diethyl-5-[6-methoxy-2-(trifluoromethyl)-3-pyridinyl]pyrazinyl]amino]-4-ethoxy-, phenylmethyl ester, (3R,4S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

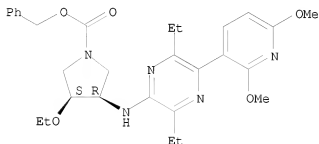




RN 793675-93-1 CAPLUS

CN 1-Pyrrolidinecarboxylic acid, 3-[[5-(2,6-dimethoxy-3-pyridinyl)-3,6-diethylpyrazinyl]amino]-4-ethoxy-, phenylmethyl ester, (3R,4S)- (9CI) (CA INDEX NAME)

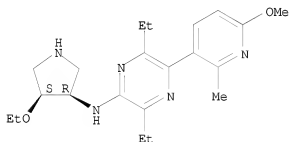
Absolute stereochemistry.



RN 793675-94-2 CAPLUS

CN Pyrazinamine, N-[(3R,4S)-4-ethoxy-3-pyrrolidinyl]-3,6-diethyl-5-(6-methoxy-2-methyl-3-pyridinyl)- (9CI) (CA INDEX NAME)

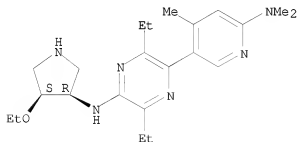
Absolute stereochemistry.



RN 793675-95-3 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-N-[(3R,4S)-4-ethoxy-3-pyrrolidinyl]-3,6-diethyl- (9CI) (CA INDEX NAME)

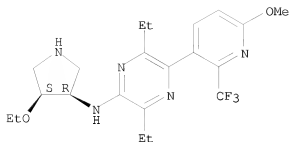
Absolute stereochemistry.



RN 793675-97-5 CAPLUS

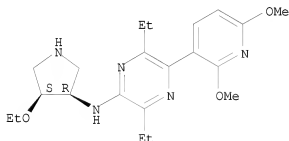
CN Pyrazinamine, N-[(3R,4S)-4-ethoxy-3-pyrrolidinyl]-3,6-diethyl-5-[6-methoxy-2-(trifluoromethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 793675-98-6 CAPLUS  
 CN Pyrazinamine, 5-(2,6-dimethoxy-3-pyridinyl)-N-[(3R,4S)-4-ethoxy-3-pyrrolidinyl]-3,6-diethyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 75 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:927551 CAPLUS

DOCUMENT NUMBER: 142:412917

TITLE: Synthesis and optical properties of push-pull type tetrapyrrolineporphyrans

AUTHOR(S): Lee, Bum Hoon; Jaung, Jae Yun; Jang, Se Chan; Yi, Sung Chul

CORPORATE SOURCE: R&D Center, Texan Medtech Co. Ltd., Kyunggi-do, 429-450, S. Korea

SOURCE: Dyes and Pigments (2004), Volume Date 2005, 65(2), 159-167

CODEN: DYPIDX; ISSN: 0143-7208

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 142:412917

AB The optical properties of push-pull type tetrapyrrolineporphyrans copper complexes based on 2,3-dicyanopyrazines were demonstrated. They have an alkylphenyl substituent as an electron donor group at the 5-position, and nitrophenyl or octylsulfonylphenyl substituents as an electron acceptor group at the 6-position of the 2,3-dicyanopyrazines. The absorption and fluorescence maxima of nitro-substituted compds. were observed at 427-444 and 453-494 nm, resp. In the case of the sulfonyl-substituted compds., the hypsochromic shift of absorption and fluorescence maxima were 59-104 and 13-79 nm, resp.

IT 850408-98-9P 850408-99-0P 850409-00-6P

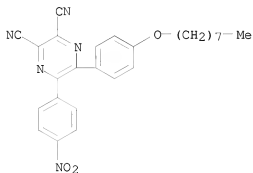
850409-01-7P 850409-02-8P 850409-03-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; preparation and optical properties of push-pull type  
tetrapyrazinoporphyrazine dyes)

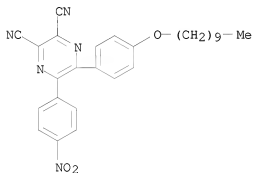
RN 850408-98-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-(4-nitrophenyl)-6-[4-(octyloxy)phenyl]- (CA  
INDEX NAME)



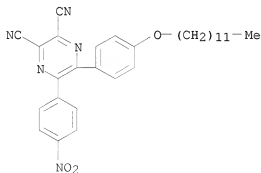
RN 850408-99-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-(4-nitrophenyl)- (CA  
INDEX NAME)



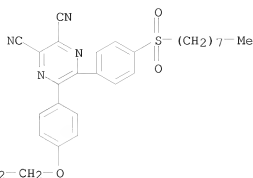
RN 850409-00-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(dodecyloxy)phenyl]-6-(4-nitrophenyl)-  
(CA INDEX NAME)



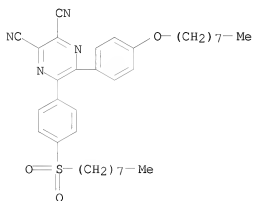
RN 850409-01-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(3-methylbutoxy)phenyl]-6-[4-(  
octylsulfonyl)phenyl]- (CA INDEX NAME)



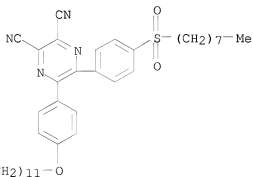
RN 850409-02-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(octyloxy)phenyl]-6-[4-(octylsulfonyl)phenyl]- (CA INDEX NAME)



RN 850409-03-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(dodecyloxy)phenyl]-6-[4-(octylsulfonyl)phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 76 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:759828 CAPLUS

DOCUMENT NUMBER: 141:260774

TITLE: Preparation of pyrazinecarboxamide compounds as inhibitors of transforming growth factor (TGF) signaling pathway

INVENTOR(S): Munchhof, Michael J.

PATENT ASSIGNEE(S): Pfizer Inc., USA

SOURCE: U.S. Pat. Appl. Publ., 26 pp.  
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

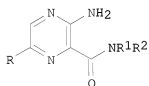
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

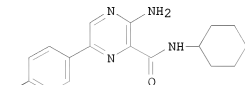
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004180905	A1	20040916	US 2004-798198	20040310
US 7199123	B2	20070403		
CA 2517720	A1	20040923	CA 2004-2517720	20040223
WO 2004080982	A1	20040923	WO 2004-1B581	20040223
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1606267	A1	20051221	EP 2004-713617	20040223
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2004008251	A	20060301	BR 2004-8251	20040223
JP 2006519833	T	20060831	JP 2006-506288	20040223
PRIORITY APPLN. INFO.:			US 2003-453784P	P 20030311
			WO 2004-1B581	W 20040223

OTHER SOURCE(S): MARPAT 141:260774

GI



I



II

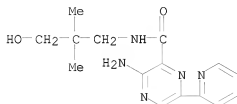
AB Pyrazine compds. of formula I [R = (substituted) Ph, heterocyclcyl, heteroaryl, aryl; R1 = H, R2 = alkyl, cycloalkyl, aryl, heteroaryl, etc.; NR2R2 = (substituted) heterocyclcyl, heteroaryl] are prepared The compds. are potent inhibitors of transforming growth factor (TGF)- $\beta$  signaling pathway. They are useful in the treatment of various TGF-related disease states including, for example, cancer and fibrotic diseases. Thus, II was prepared, and had IC50 of 1.19  $\mu$ M.

IT 756524-42-2P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

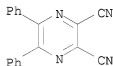
(preparation of pyrazinecarboxamides as inhibitors of TGF- $\beta$  signaling pathway)

RN 756524-42-2 CAPLUS  
CN Pyrazinecarboxamide, 3-amino-N-(3-hydroxy-2,2-dimethylpropyl)-6-(2-pyridinyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 77 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:741141 CAPLUS  
DOCUMENT NUMBER: 142:74386  
TITLE: Synthesis and spectral characteristics of unsymmetrical porphyrazines with triphenylmethyl groups  
AUTHOR(S): Galanin, N. E.; Kudrik, E. V.; Shaposhnikov, G. P.; Aleksandriiskii, V. V.  
CORPORATE SOURCE: Ivanovo State University of Chemistry and Technology, Ivanovo, 153460, Russia  
SOURCE: Russian Journal of Organic Chemistry (Translation of Zhurnal Organicheskoi Khimii) (2004), 40(5), 723-728  
CODEN: RJOCEQ; ISSN: 1070-4280  
PUBLISHER: MAIK Nauka/Interperiodica Publishing  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 142:74386  
AB Condensation of 4-[4-(triphenylmethyl)phenoxy]-1,2-dicyanobenzene with bis(methylthio)maleonitrile or 2,3-dicyano-5,6-diphenylpyrazine afforded sym. and unsym. porphyrazines. The effect of their structural modification on the spectral characteristics was investigated.  
IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(synthesis via cyclocondensation and spectral characteristics of unsym. porphyrazine with triphenylmethyl groups)  
RN 52197-23-6 CAPLUS  
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 78 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:740294 CAPLUS  
DOCUMENT NUMBER: 141:260769  
TITLE: Preparation of aminoheteroaryl compounds as protein kinase inhibitors  
INVENTOR(S): Cui, Jingjong Jean

PATENT ASSIGNEE(S): Sugan, Inc., USA; Bhumralkar, Dilip; Botrous, Iriny; Chu Ji Yu; Funk, Lee A; Hanau, Cathleen Elizabeth; Harris, G. Davis, Jr.; Jia, Lei; et al.

SOURCE: PCT Int. Appl., 312 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

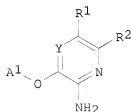
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004076412	A2	20040910	WO 2004-US5495	20040226
WO 2004076412	A3	20041229		
<p>W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, RW: BW, GH, GM, KE, LS, MM, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG</p>				
AU 2004215428	A1	20040910	AU 2004-215428	20040226
CA 2517256	A1	20040910	CA 2004-2517256	20040226
US 2005009840	A1	20050113	US 2004-786610	20040226
US 7230098	B2	20070612		
EP 1603570	A2	20051214	EP 2004-715001	20040226
<p>R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK</p>				
BR 2004007827	A	20060214	BR 2004-7827	20040226
CN 1777427	A	20060524	CN 2004-80010633	20040226
JP 2006519232	T	20060824	JP 2006-503845	20040226
ZA 2005006460	A	20060830	ZA 2005-6460	20050812
IN 2005DN03734	A	20070601	IN 2005-DN3734	20050823
NO 2005004080	A	20051121	NO 2005-4080	20050901
US 2007072874	A1	20070329	US 2006-598765	20061114
PRIORITY APPLN. INFO.:				
			US 2003-449588P	P 20030226
			US 2004-540229P	P 20040129
			US 2004-786610	A3 20040226
			WO 2004-US5495	A 20040226

OTHER SOURCE(S): MARPAT 141:260769

GI



I

AB The title aminopyridines and aminopyrazines [I; Y = N, CR11; R1 = aryl, heteroaryl, cycloalkyl, etc.; R2 = H, halo, alkyl, cycloalkyl, etc.; A1 = (CR9R10)nA2 (with provisos); R9, R10 = H, halo, alkyl, cycloalkyl, etc.; n = 0-4; A2 = aryl, heteroaryl, cycloalkyl, heterocyclic; R11 = halo, alkyl, alkoxy, etc.] which have activity as protein kinase inhibitors, including

as inhibitors of c-MET (IC50 values given), were prepared E.g., a multi-step synthesis of 3-(3-methoxybenzyloxy)-5-phenylpyridin-2-amine, was given.

IT 756513-66-3P 756513-68-5P 756513-72-1P  
756513-74-3P 756513-76-5P 756513-78-7P  
756513-80-1P 756513-82-3P 756513-84-5P  
756513-86-7P 756513-88-9P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of substituted aminopyridines and aminopyrazines as protein kinase inhibitors)

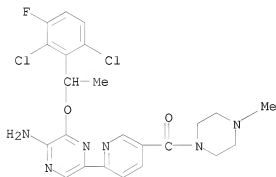
RN 756513-66-3 CAPLUS

CN Piperazine, 1-[[6-[5-amino-6-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]pyrazinyl]-3-pyridinyl]carbonyl]-4-methyl-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 756513-65-2

CMF C23 H23 Cl2 F N6 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



RN 756513-68-5 CAPLUS

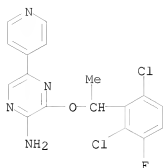
CN Pyrazinamine, 3-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]-5-(4-pyridinyl)-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 756513-67-4

CMF C17 H13 Cl2 F N4 O





CM 2

CRN 76-05-1

CMF C2 H F3 O2



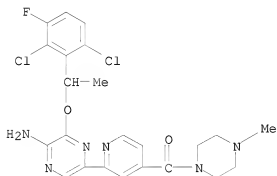
RN 756513-72-1 CAPLUS

CN Piperazine, 1-[[2-[5-amino-6-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]pyrazinyl]-4-pyridinyl]carbonyl]-4-methyl-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 756513-71-0

CMF C23 H23 Cl2 F N6 O2



CM 2

CRN 76-05-1

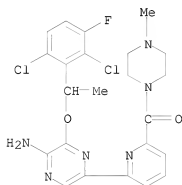
CMF C2 H F3 O2



RN 756513-74-3 CAPLUS  
 CN Piperazine, 1-[6-[5-amino-6-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]pyrazinyl]-2-pyridinyl]carbonyl]-4-methyl-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 756513-73-2  
 CMF C23 H23 Cl2 F N6 O2



CM 2

CRN 76-05-1  
 CMF C2 H F3 O2

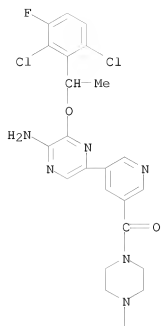


RN 756513-76-5 CAPLUS  
 CN Piperazine, 1-[5-[5-amino-6-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]pyrazinyl]-3-pyridinyl]carbonyl]-4-methyl-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 756513-75-4  
 CMF C23 H23 Cl2 F N6 O2

PAGE 1-A



PAGE 2-A



CM 2

CRN 76-05-1

CMF C2 H F3 O2



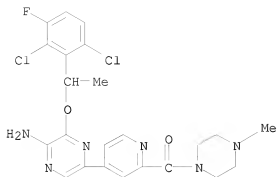
RN 756513-78-7 CAPLUS

CN Piperazine, 1-[[4-[5-amino-6-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]pyrazinyl]-2-pyridinyl]carbonyl]-4-methyl-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 756513-77-6

CMF C23 H23 Cl2 F N6 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



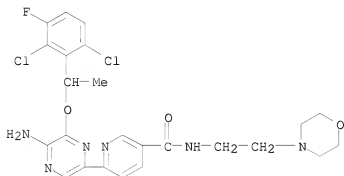
RN 756513-80-1 CAPLUS

CN 3-Pyridinecarboxamide, 6-[5-amino-6-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]pyrazinyl]-N-[2-(4-morpholinyl)ethyl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 756513-79-8

CMF C24 H25 Cl2 F N6 O3



CM 2

CRN 76-05-1

CMF C2 H F3 O2

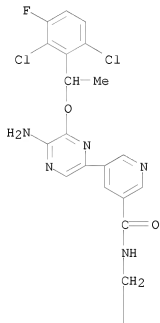


RN 756513-82-3 CAPLUS  
 CN 3-Pyridinecarboxamide, 5-[5-amino-6-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]pyrazinyl]-N-[2-(4-morpholinyl)ethyl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

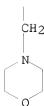
CM 1

CRN 756513-81-2  
 CMF C24 H25 Cl2 F N6 O3

PAGE 1-A



PAGE 2-A



CM 2

CRN 76-05-1

CMF C2 H F3 O2



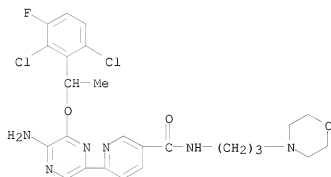
RN 756513-84-5 CAPLUS

CN 3-Pyridinecarboxamide, 6-[5-amino-6-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]pyrazinyl]-N-[3-(4-morpholinyl)propyl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 756513-83-4

CMF C25 H27 Cl2 F N6 O3



CM 2

CRN 76-05-1

CMF C2 H F3 O2



RN 756513-86-7 CAPLUS

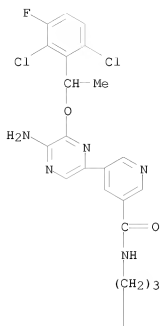
CN 3-Pyridinecarboxamide, 5-[5-amino-6-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]pyrazinyl]-N-[3-(4-morpholinyl)propyl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 756513-85-6

CMF C25 H27 Cl2 F N6 O3

PAGE 1-A



PAGE 2-A



CM 2

CRN 76-05-1

CMF C2 H F3 O2



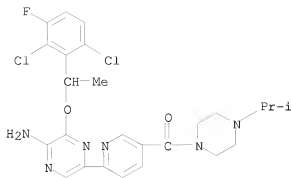
RN 756513-88-9 CAPLUS

CN Piperazine, 1-[[6-[5-amino-6-[1-(2,6-dichloro-3-fluorophenyl)ethoxy]pyrazinyl]-3-pyridinyl]carbonyl]-4-(1-methylethyl)-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 756513-87-8

CMF C25 H27 Cl2 F N6 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



L14 ANSWER 79 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:681594 CAPLUS

DOCUMENT NUMBER: 141:212754

TITLE: Stable dispersion of solid particles comprising a water-insoluble pyrazine compound

INVENTOR(S): Lindfors, Lennart

PATENT ASSIGNEE(S): AstraZeneca AB, Swed.; AstraZeneca UK Limited

SOURCE: PCT Int. Appl., 50 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004069277	A1	20040819	WO 2004-GB416	20040202
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, RW, BG, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1592451	A1	20051109	EP 2004-707261	20040202
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
JP 2006516986	T	20060713	JP 2006-502231	20040202
US 2006134146	A1	20060622	US 2005-543264	20050725
PRIORITY APPLN. INFO.:			GB 2003-2673	A 20030206
			WO 2004-GB416	W 20040202



OTHER SOURCE(S): MARPAT 141:212754

AB A process for the preparation of a stable dispersion of solid particles, in an aqueous medium comprises combining (a) a first solution comprising a substantially water-insol. substance which is a pyrazine compound, a water-miscible organic solvent and an inhibitor with (b) an aqueous phase comprising water and optionally a stabilizer, thereby precipitating solid particles comprising the inhibitor and the substantially water-insol. substance; and optionally removing the water-miscible organic solvent; wherein the inhibitor is a non-polymeric hydrophobic organic compound as defined in the description. Also claimed are stable dispersions obtainable by the process, solid particles obtainable by the process and use of such particles. The process provides a dispersion of solid particles in an aqueous medium, which particles exhibit reduced or substantially no particle growth mediated by Ostwald ripening. The process is particularly suitable for the preparation of small (sub-micron)

aqueous dispersions of a substantially water-insol. pharmacol. active substance. For example, the preparation of 5,6-bis(4-chlorophenyl)-N-piperidin-1-yl-pyrazine-2-carboxamide/Miglyol 812N (4:1 weight/weight) dispersion was presented. A solution of 300 mM 5,6-bis(4-chlorophenyl)-N-piperidin-1-yl-pyrazine-2-carboxamide and 32.1 mg/mL Miglyol 812N in dimethylacetamide was prepared, and 0.15 mL of the solution was added rapidly to 2.85 mL of an aqueous solution containing 0.2% weight/weight polyvinylpyrrolidone and 0.25

mM sodium dodecyl sulfate. The aqueous solution was sonicated during the addition of the organic

solution using an ultrasonic bath. This resulted in the precipitation of particles with a mean size of 165 nm. No increase in particle size was observed over a period of 2 h at 20°.

IT 13515-07-6P, 5,6-Diphenylpyrazine-2-carboxylic acid

122956-28-9P 548760-11-8P 548760-12-9P

548760-13-0P 548760-14-1P 548760-15-2P

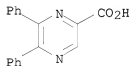
548760-16-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of stable dispersions of solid particles comprising water-insol. pyrazinecarboxamide compds.)

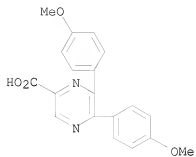
RN 13515-07-6 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-diphenyl- (CA INDEX NAME)



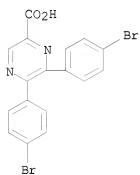
RN 122956-28-9 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



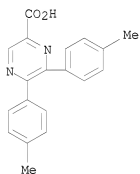
RN 548760-11-8 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



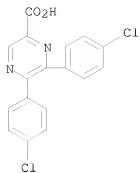
RN 548760-12-9 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)



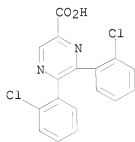
RN 548760-13-0 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



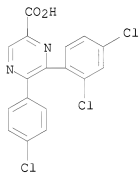
RN 548760-14-1 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(2-chlorophenyl)- (CA INDEX NAME)



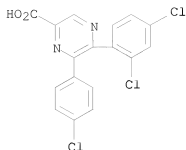
RN 548760-15-2 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-6-(2,4-dichlorophenyl)- (CA INDEX NAME)



RN 548760-16-3 CAPLUS

CN 2-Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-5-(2,4-dichlorophenyl)- (CA INDEX NAME)



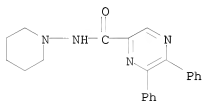
IT 548759-92-8P 548759-93-9P 548759-94-0P  
 548759-95-1P 548759-96-2P 548759-97-3P  
 548759-98-4P 548759-99-5P 548760-00-5P  
 548760-01-6P 548760-02-7P 548760-03-8P  
 548760-04-9P 548760-05-0P 548760-06-1P  
 548760-07-2P 548760-08-3P 548760-09-4P  
 548760-10-7P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of stable dispersions of solid particles comprising water-insol. pyrazinecarboxamide compds.)

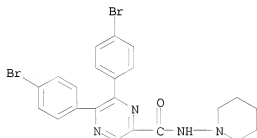
RN 548759-92-8 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-diphenyl-N-1-piperidinyl- (CA INDEX NAME)



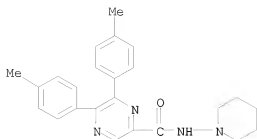
RN 548759-93-9 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-bromophenyl)-N-1-piperidinyl- (CA INDEX NAME)



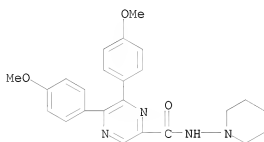
RN 548759-94-0 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-1-piperidinyl- (CA INDEX NAME)



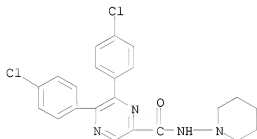
RN 548759-95-1 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methoxyphenyl)-N-1-piperidinyl- (CA INDEX NAME)



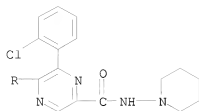
RN 548759-96-2 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



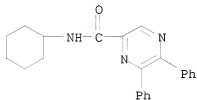
RN 548759-97-3 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(2-chlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



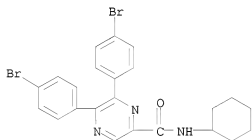
RN 548759-98-4 CAPLUS

CN Pyrazinecarboxamide, N-cyclohexyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



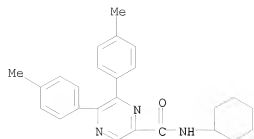
RN 548759-99-5 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-bromophenyl)-N-cyclohexyl- (CA INDEX NAME)

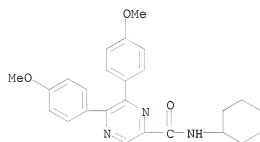


RN 548760-00-5 CAPLUS

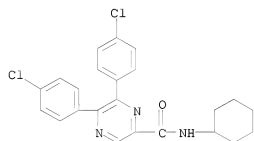
CN 2-Pyrazinecarboxamide, N-cyclohexyl-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



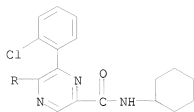
RN 548760-01-6 CAPLUS  
 CN 2-Pyrazinecarboxamide, N-cyclohexyl-5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



RN 548760-02-7 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-cyclohexyl- (CA INDEX NAME)

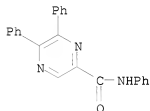


RN 548760-03-8 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(2-chlorophenyl)-N-cyclohexyl- (CA INDEX NAME)



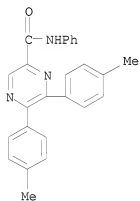
RN 548760-04-9 CAPLUS

CN 2-Pyrazinecarboxamide, N,5,6-triphenyl- (CA INDEX NAME)



RN 548760-05-0 CAPLUS

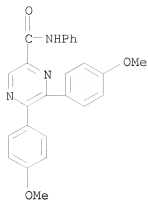
CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-phenyl- (CA INDEX NAME)



RN 548760-06-1 CAPLUS

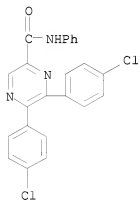
CN 2-Pyrazinecarboxamide, 5,6-bis(4-methoxyphenyl)-N-phenyl- (CA INDEX NAME)





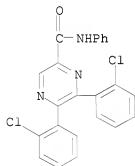
RN 548760-07-2 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-phenyl- (CA INDEX NAME)



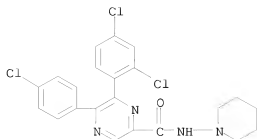
RN 548760-08-3 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(2-chlorophenyl)-N-phenyl- (CA INDEX NAME)

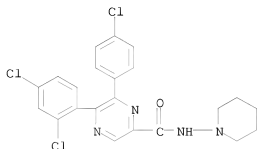


RN 548760-09-4 CAPLUS

CN 2-Pyrazinecarboxamide, 5-(4-chlorophenyl)-6-(2,4-dichlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)

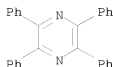


RN 548760-10-7 CAPLUS  
 CN 2-Pyrazinecarboxamide, 6-(4-chlorophenyl)-5-(2,4-dichlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



L14 ANSWER 80 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:669572 CAPLUS  
 DOCUMENT NUMBER: 142:126015  
 TITLE: Reactions of benzonitrile with diiodides of neodymium, dysprosium, and thulium  
 AUTHOR(S): Balashova, T. V.; Khoroshenkov, G. V.; Kusyaev, D. M.; Eremenko, I. L.; Aleksandrov, G. G.; Fukin, G. K.; Bochkarev, M. N.  
 CORPORATE SOURCE: G. A. Razuvaev Institute of Organometallic Chemistry, Russian Academy of Sciences, Nizhny Novgorod, 603950, Russia  
 SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (2004), 53(4), 825-829  
 CODEN: RCBUEY; ISSN: 1066-5285  
 PUBLISHER: Kluwer Academic/Consultants Bureau  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 142:126015  
 AB The reactions of LnI<sub>2</sub> (Ln = Nd, Dy, Tm) with benzonitrile are accompanied by disproportionation, giving triiodides LnI<sub>3</sub>(PhCN)<sub>4</sub> and an intractable mixture of monoiodine derivs. LnI(R)R. Hydrolysis of the mixture gives 2,4,6-triphenyl-1,3,5-triazine, 2,3,5,6-tetraphenyl-1,4-pyrazine, and 2,4,5-triphenylimidazole. The reaction of DyI<sub>2</sub> with acrylonitrile gives a metal-containing polymer with a mol. weight of 2700. Treatment of the polymer with H<sub>2</sub>O results in separation of DyI<sub>2</sub>(OH)(H<sub>2</sub>O)<sub>x</sub> to give metal-free polyacrylonitrile with a mol. weight of 2400.  
 IT 642-04-6P, 2,3,5,6-Tetraphenyl-1,4-pyrazine  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation from lanthanide diiodide and benzonitrile)  
 RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

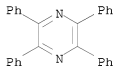
L14 ANSWER 81 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:560316 CAPLUS  
DOCUMENT NUMBER: 142:240149  
TITLE: Synthesis of 1,2-diphenyl-2-aminoalcohol via catalytic hydrogenation  
AUTHOR(S): Tao, Jingchao; Gong, Jianhong; Liu, Yuxia; Fan, Yafang; Liu, Hongmin  
CORPORATE SOURCE: Department of Chemistry, Zhengzhou University, Zhengzhou, 450052, Peop. Rep. China  
SOURCE: Zhengzhou Daxue Xuebao, Lixueban (2004), 36(2), 76-79  
CODEN: ZDXLA4; ISSN: 1671-6841  
PUBLISHER: Zhengzhou Daxue Xuebao, Lixueban Bianjibu  
DOCUMENT TYPE: Journal  
LANGUAGE: Chinese  
OTHER SOURCE(S): CASREACT 142:240149

AB The catalytic hydrogenation of benzoin oxime to 2-amino-1,2-diphenylethanol with Raney Ni or Pd-C as catalyst is studied. The erythro- and threo-diastereo mixture is formed simultaneously when Raney Ni is used as catalyst whereas only erythro-racemic products are obtained in the presence of Pd-C. A hypothesis mechanism of the hydrogenation of benzoin oxime catalyzed by the two types of catalysts is suggested.

IT 642-04-6P, 2,3,5,6-Tetraphenylpyrazine  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(synthesis of 1,2-diphenyl-2-aminoalc. via catalytic hydrogenation)

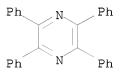
RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 82 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:555890 CAPLUS  
DOCUMENT NUMBER: 141:225399  
TITLE: Microwave-assisted one-pot synthesis of trisubstituted imidazoles on solid support  
AUTHOR(S): Xu, Yu; Wan, Li-Feng; Salehi, Hojatollah; Deng, Wei; Guo, Qing-Xiang  
CORPORATE SOURCE: Department of Chemistry, University of Science and Technology of China, Hefei, 230026, Peop. Rep. China  
SOURCE: Heterocycles (2004), 63(7), 1613-1618  
CODEN: HTCYAM; ISSN: 0385-5414  
PUBLISHER: Japan Institute of Heterocyclic Chemistry  
DOCUMENT TYPE: Journal

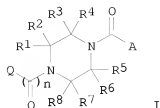
LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 141:225399  
 AB A solvent-free microwave-assisted synthesis of trisubstituted imidazoles is reported. The imidazoles are produced by the condensation of  $\alpha$ -hydroxyketone with an aldehyde over silica gel or alumina impregnated with ammonium acetate as the solid support in short time with good yields. An air oxidation mechanism is proposed, and this clean air oxidation considerably reduces the cost of imidazole synthesis.  
 IT 642-04-6P, Tetraphenylpyrazine  
 RL: BYP (Byproduct); PREP (Preparation)  
 (microwave-assisted preparation of trisubstituted imidazoles by oxidative condensation of  $\alpha$ -hydroxyketone with aldehydes on solid support reagents)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



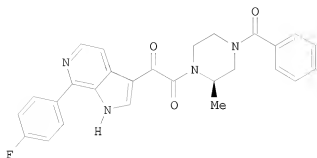
L14 ANSWER 83 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:473357 CAPLUS  
 DOCUMENT NUMBER: 141:38633  
 TITLE: Composition and antiviral activity of substituted azaindoleoxoacetic piperazine derivatives  
 INVENTOR(S): Wang, Tao; Zhang, Zhongxing; Meanwell, Nicholas A.; Kadow, John F.; Yin, Zhiwei; Xue, Qiufen May; Regueiro-Ren, Alicia; Matiskella, John D.; Ueda, Yasutsugu  
 PATENT ASSIGNEE(S): Bristol-Myers Squibb Company, USA  
 SOURCE: U.S. Pat. Appl. Publ., 350 pp., Cont.-in-part of U.S. Pat. Appl. 2003 207,910.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004110785	A1	20040610	US 2003-630278	20030730
US 2003069266	A1	20030410	US 2002-38306	20020102
US 2003207910	A1	20031106	US 2002-214982	20020807
ZA 2003005885	A	20041101	ZA 2003-5885	20030730
US 2005090522	A1	20050428	US 2004-969675	20041020
PRIORITY APPLN. INFO.:			US 2001-266183P	P 20010202
			US 2001-314406P	P 20010823
			US 2002-38306	B2 20020102
			US 2002-214982	B2 20020807
			US 2003-630278	B1 20030730

OTHER SOURCE(S): MARPAT 141:38633  
 GI

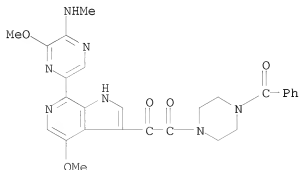


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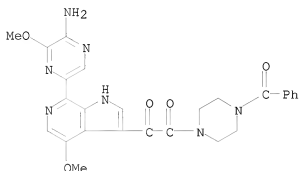


II

- AB Title compds. I [ $n = 1$  or  $2$ ;  $Q =$  (un)substituted azaindole heterocycle;  $A =$  alkoxy, (un)substituted aryl or heteroaryl;  $R1-8$  are independently selected from H, alkyl or haloalkyl consisting of up to three halogen substituents with same or different halogens] having drug and bio-affecting properties, their pharmaceutical compns., method of use, and synthetic preparation are disclosed. Thus, e.g., II was prepared via palladium catalyzed coupling of 1-benzoyl-3-(R)-methyl-4-[(7-(4-fluorophenyl)-6-azaindol-3-yl)oxoacetyl]-piperazine (preparation given) with 4-fluorophenylboronic acid. The compds. I were tested for inhibition of luciferase expression (data given). These compds. possess unique antiviral activity, whether used alone or in combination with other antivirals, antiinfectives, immunomodulators or HIV entry inhibitors. More particularly, the present invention relates to the treatment of HIV and AIDS.
- IT 446289-50-5P 446289-52-7P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (target compound; preparation and antiviral activity of substituted azaindoxoxoacetic piperazine derivs.)
- RN 446289-50-5 CAPLUS
- CN Piperazine, 1-benzoyl-4-[[4-methoxy-7-[6-methoxy-5-(methylamino)pyrazinyl]-1H-pyrrolo[2,3-c]pyridin-3-yl]oxoacetyl]- (9CI) (CA INDEX NAME)



RN 446289-52-7 CAPLUS  
 CN Piperazine, 1-[[7-(5-amino-6-methoxypyrazinyl)-4-methoxy-1H-pyrrolo[2,3-c]pyridin-3-yl]oxoacetyl]-4-benzoyl- (9CI) (CA INDEX NAME)



L14 ANSWER 84 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:473163 CAPLUS  
 DOCUMENT NUMBER: 141:30891  
 TITLE: Organic electroluminescent device and display  
 INVENTOR(S): Fukuda, Mitsuhiro; Kita, Hiroshi; Yamada, Taketoshi  
 PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan  
 SOURCE: U.S. Pat. Appl. Publ., 37 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004110031	A1	20040610	US 2003-718360	20031120
US 7270893	B2	20070918		
JP 2004178895	A	20040624	JP 2002-342192	20021126
			JP 2002-342192	A 20021126

PRIORITY APPLN. INFO.:

OTHER SOURCE(S): MARPAT 141:30891

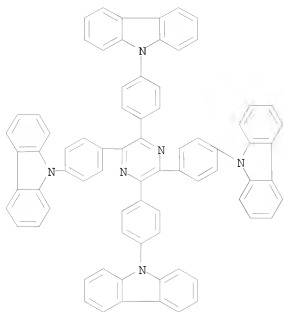
AB Disclosed is an organic electroluminescent device comprising a component layer including a light emission layer, wherein the light emission layer contains a phosphorescent compound, and the component layer contains a compound represented by A-(Z)<sub>n</sub>, [A = (un)substituted aromatic ring residue; n = 3-6 integer; and Z = monovalent organic group represented by -L-Cz, [L = chemical bond and divalent linking group; Cz = (un)substituted carbazole residue], provided that A-(Z)<sub>n</sub> does not have an n-fold axis of symmetry].

IT 699119-73-8P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (organic electroluminescent device and display having light emitting layer containing phosphorescent substance)

RN 699119-73-8 CAPLUS

CN 9H-Carbazole, 9,9',9'',9'''-(2,3,5,6-pyrazinetetrayltetra-4,1-phenylene)tetrakis- (9CI) (CA INDEX NAME)



L14 ANSWER 85 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:433750 CAPLUS

DOCUMENT NUMBER: 141:7131

TITLE: Preparation of quinazolines and analogs as Akt inhibitors and indoles as protein kinase inhibitors for use in synergistic combination therapy for the treatment of cancer

INVENTOR(S): Barnett, Stanley F.; Defeo-Jones, Deborah D.; Hartman, George D.; Huber, Hans E.; Stirdivant, Steven M.; Heimbrook, David C.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 121 pp., which

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004102360	A1	20040527	US 2003-678565	20031003
PRIORITY APPLN. INFO.:			US 2002-422312P	P 20021030
			US 2003-460911P	P 20030407

OTHER SOURCE(S): MARPAT 141:7131

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The present invention relates to methods of treating cancer using a combination of at least two Akt inhibitors I [wherein Q = (un)substituted heterocycllyl, aryl; U, V, W, and X = independently CH, N; Y, Z = independently CH, N, provided that at least one of Y and Z = N; n = 0-3; p = 0-2; q = 0-4; R1, R2, R7 = independently halo, CN, OH, CHO, NO2, or

(un)substituted (cyclo)alkyl(oxy), alkenyl(oxy), alkynyl(oxy), heterocyclyl(oxy), acyl, carboxy, carbamoyl(oxy), ureido, sulfamoyl, etc.; R3, R4 = independently H, (perfluoro)alkyl; or CR3R4 = cycloalkyl, heterocyclyl; and pharmaceutically acceptable salts or stereoisomers thereof] or a combination of I and a protein kinase inhibitor II [wherein G = H2, O; X = C, N, S00-2, O; m = 0-2; n = 0-2; p = 0-6; q = 0-4; R1 = independently H, halo, or (un)substituted (cyclo)alkyl, heterocyclyl, aryl, carbamoyl, amino, acyl, sulfamoyl, carboxy, etc.; R2 = H or (un)substituted (cyclo)alkyl(oxy), amino, aryloxy, heterocycliloxy, alkynyloxy, alkynyloxy, etc.; R5 = independently H, halo, NO2, CN, or (un)substituted alkyl, alkenyl, alkynyl, carboxy, acyl, sulfamoyl, carbamoyl, ureido, amino, etc.; and pharmaceutically acceptable salts or stereoisomers thereof], optionally in combination with a third compound. Examples include syntheses for I and II and assays demonstrating Akt inhibitor activity, antitumor activity, and the synergistic effect of combinations of AKT inhibitors and/or protein kinase inhibitors on caspase 3 activity. For instance, III•HCl was prepared in an 8-step reaction sequence culminating with the cycloaddn. of 4-(2-aminoprop-2-yl)benzil and o-phenylenediamine using glacial acetic acid in H2O, followed by work up with chloroform and ethanolic HCl. III•HCl, a selective Akt1 and Akt2 inhibitor, demonstrated a 3.2-fold in caspase 3 activation over control compared to a 1.2-fold increase for a protein kinase inhibitor. Combination treatment produced a 9-fold increase in caspase 3 activation.

IT 612847-15-1P 612847-16-2P 612847-17-3P

612847-18-4P 612847-19-5P 612847-20-8P

612848-78-9P 616873-13-3P 616873-19-9P

616873-21-3P 616873-27-9P 616873-29-1P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU

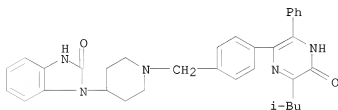
(Therapeutic use); BIOL (Biological study); PREP (Preparation); USES

(Uses)

(antitumor agent; preparation of quinazolines and analogs as Akt inhibitors and indoles as protein kinase inhibitors for use in synergistic combination therapy for treatment of cancer)

RN 612847-15-1 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 612847-16-2 CAPLUS

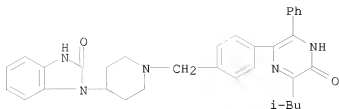
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-15-1

CMF C33 H35 N5 O2





CM 2

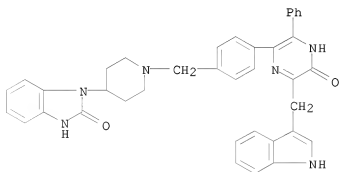
CRN 76-05-1

CMF C2 H F3 O2



RN 612847-17-3 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-(1H-indol-3-ylmethyl)-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



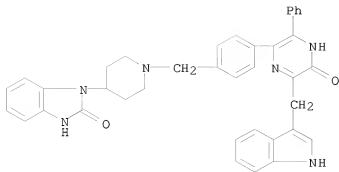
RN 612847-18-4 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-(1H-indol-3-ylmethyl)-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-17-3

CMF C38 H34 N6 O2



CM 2

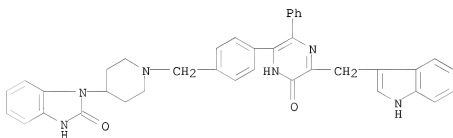
CRN 76-05-1

CMF C2 H F3 O2



RN 612847-19-5 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-indol-3-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



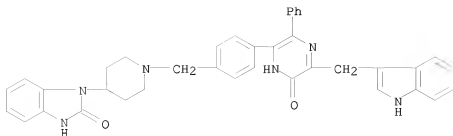
RN 612847-20-8 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-indol-3-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-19-5

CMF C38 H34 N6 O2



CM 2

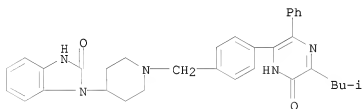
CRN 76-05-1

CMF C2 H F3 O2



RN 612848-78-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



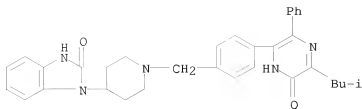
RN 616873-13-3 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612848-78-9

CMF C33 H35 N5 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



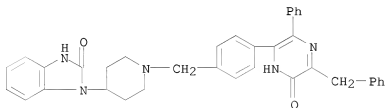
RN 616873-19-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-6-oxo-3-phenyl-5-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-18-8

CMF C36 H33 N5 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



RN 616873-21-3 CAPLUS

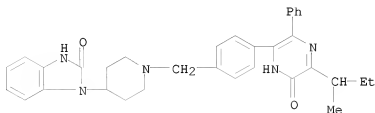
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1-methylpropyl)-6-oxo-3-

phenylpyrazinyl]phenyl)methyl]-4-piperidinyl]-1,3-dihydro-,  
trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-20-2

CMF C33 H35 N5 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



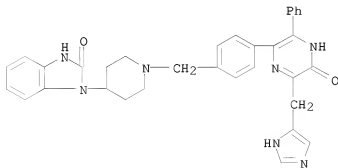
RN 616873-27-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-imidazol-4-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl)methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-26-8

CMF C33 H31 N7 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



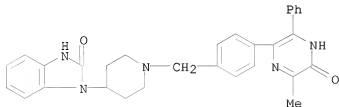
RN 616873-29-1 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-methyl-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-28-0

CMF C30 H29 N5 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



L14 ANSWER 86 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:257382 CAPLUS

DOCUMENT NUMBER: 141:16871

TITLE: Synthesis and biological evaluation of 2,3-diarylpyrazines and quinoxalines as selective COX-2 inhibitors

AUTHOR(S): Singh, Sunil K.; Saibaba, V.; Ravikumar, V.; Rudrawar, Santosh V.; Daga, Pankaj; Rao, C. Seshagiri; Akhila, V.; Hegde, P.; Rao, Y. Koteswar  
CORPORATE SOURCE: Discovery Chemistry, Discovery Research-Dr. Reddy's Laboratories Ltd., Bollaram Road, Miyapur, Hyderabad, 500 049, India

SOURCE: Bioorganic & Medicinal Chemistry (2004), 12(8), 1881-1893

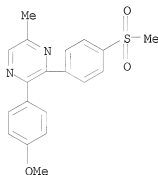
PUBLISHER: CODEN: BMECEP; ISSN: 0968-0896  
Elsevier Ltd.

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 141:16871

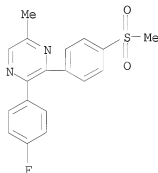
AB Several 2,3-diaryl pyrazines and quinoxalines with 4-sulfamoyl (SO<sub>2</sub>NH<sub>2</sub>)/methylsulfonyl (SO<sub>2</sub>Me)-Ph pharmacophores have been synthesized and evaluated for the cyclooxygenase (COX-1/COX-2) inhibitory activity. Smaller groups such as methoxy, Me and fluoro when substituted at/around position-4 of the adjacent Ph ring, have great impact on the selective COX-2 inhibitory activity of the series. Many potential compds. were obtained from a brief structure-activity relationship (SAR) study. Two of these, compds. exhibited excellent in vivo activity in the established animal model of inflammation. Since one of the compds. possessed an amenable sulfonamide group, two prodrugs were also synthesized which have excellent in vivo potential, and represent a new class of COX-2 inhibitor.

IT 699003-05-9P 699003-06-0P 699003-09-3P  
 699003-11-7P 699003-13-9P 699003-15-1P  
 699003-20-8P 699003-23-1P  
 RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (synthesis and structure-activity relationship studies of 2,3-diarylpyrazines and quinoxalines as selective COX-2 inhibitors)

RN 699003-05-9 CAPLUS  
 CN Pyrazine, 2-(4-methoxyphenyl)-5-methyl-3-[4-(methylsulfonyl)phenyl]- (CA INDEX NAME)

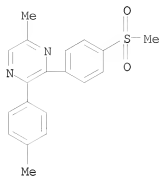


RN 699003-06-0 CAPLUS  
 CN Pyrazine, 2-(4-fluorophenyl)-5-methyl-3-[4-(methylsulfonyl)phenyl]- (CA INDEX NAME)



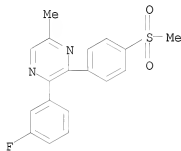
RN 699003-09-3 CAPLUS  
 CN Pyrazine, 5-methyl-2-(4-methylphenyl)-3-[4-(methylsulfonyl)phenyl]- (CA INDEX NAME)

INDEX NAME)



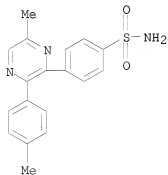
RN 699003-11-7 CAPLUS

CN Pyrazine, 2-(3-fluorophenyl)-5-methyl-3-[4-(methylsulfonyl)phenyl]- (CA INDEX NAME)



RN 699003-13-9 CAPLUS

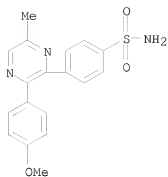
CN Benzenesulfonamide, 4-[6-methyl-3-(4-methylphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 699003-15-1 CAPLUS

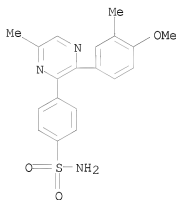
CN Benzenesulfonamide, 4-[3-(4-methoxyphenyl)-6-methylpyrazinyl]- (9CI) (CA INDEX NAME)





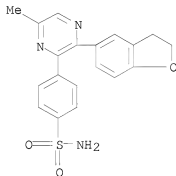
RN 699003-20-8 CAPLUS

CN Benzenesulfonamide, 4-[3-(4-methoxy-3-methylphenyl)-6-methylpyrazinyl]-  
(9CI) (CA INDEX NAME)



RN 699003-23-1 CAPLUS

CN Benzenesulfonamide, 4-[3-(2,3-dihydro-5-benzofuranyl)-6-methylpyrazinyl]-  
(9CI) (CA INDEX NAME)



REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 87 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:240481 CAPLUS

DOCUMENT NUMBER: 141:16227

TITLE: Helical zinc complexes of pyrazine-pyridine hybrids

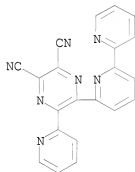
AUTHOR(S): Dias, S. I. G.; Heitzler, Fenton; Bark, T.; Labat, Gael; Neels, Antonia  
 CORPORATE SOURCE: Chemical Laboratory, School of Physical Sciences, University of Kent, Kent, CT2 7NH, UK  
 SOURCE: Polyhedron (2004), 23(6), 1011-1017  
 CODEN: PLYHDE; ISSN: 0277-5387  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 141:16227

AB The Zn(II) complexes 1aZnCl2 and 1bZnCl2 (1a = 2-(6',2''-bipyrid-2'-yl)-3-(2-pyridyl)pyrazine; 1b 2-(6',2''-bipyrid-2'-yl)-5,6-dicyano-3-(2-pyridyl)pyrazine) were prepared by treatment of the ligands with ZnCl2. The structures of both were studied by x-ray crystallog. and 1H NMR spectroscopy. Both complexes display proton deshielding phenomena that are attributed to a twisted solution-state mol. conformation. In the solid state, 1aZnCl2 exhibits a high degree of torsion about the axis through the uncomplexed pyridine ring and the pendant Cl atoms. The solid-state structure and solution-state self-associative behavior of 1bZnCl2 are indicative of a partial self-assembly motif.

IT 696605-76-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and complexation with zinc)

RN 696605-76-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[2,2'-bipyridin]-6-yl-6-(2-pyridinyl)- (CA INDEX NAME)



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 88 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:205980 CAPLUS

DOCUMENT NUMBER: 142:197903

TITLE: Product class 22: other diazinodiazines

AUTHOR(S): Ishikawa, T.

CORPORATE SOURCE: Germany

SOURCE: Science of Synthesis (2004), 16, 1337-1397  
 CODEN: SSCYJ9

PUBLISHER: Georg Thieme Verlag

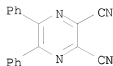
DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review. Preparation of diazinodiazines is given with the exception of pteridines.

IT 52197-23-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of diazinodiazines)

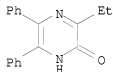
RN 52197-23-6 CAPLUS  
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



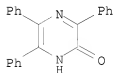
REFERENCE COUNT: 208 THERE ARE 208 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L14 ANSWER 89 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:205967 CAPLUS  
DOCUMENT NUMBER: 142:113926  
TITLE: Product class 14: pyrazines  
AUTHOR(S): Sato, N.  
CORPORATE SOURCE: Germany  
SOURCE: Science of Synthesis (2004), 16, 751-844  
CODEN: SSCYJ9  
PUBLISHER: Georg Thieme Verlag  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

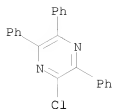
AB A review. Methods for preparing pyrazines are reviewed including cyclization, ring transformation, aromatization and substituent modification.  
IT 104369-39-3 104369-41-7 243472-78-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of pyrazines via cyclization, ring transformation, aromatization and substituent modification)  
RN 104369-39-3 CAPLUS  
CN 2(1H)-Pyrazinone, 3-ethyl-5,6-diphenyl- (CA INDEX NAME)



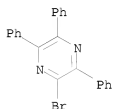
RN 104369-41-7 CAPLUS  
CN 2(1H)-Pyrazinone, 3,5,6-triphenyl- (CA INDEX NAME)



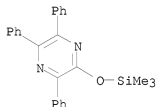
RN 243472-78-8 CAPLUS  
CN Pyrazine, chlorotriphenyl- (9CI) (CA INDEX NAME)



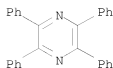
IT 243472-73-3P 243472-86-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation of pyrazines via cyclization, ring transformation,  
 aromatization and substituent modification)  
 RN 243472-73-3 CAPLUS  
 CN Pyrazine, bromotriphenyl- (9CI) (CA INDEX NAME)



RN 243472-86-8 CAPLUS  
 CN Pyrazine, triphenyl[(trimethylsilyl)oxy]- (9CI) (CA INDEX NAME)

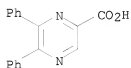


IT 642-04-6P 13515-07-6P 21885-52-9P  
 52197-23-6P 64344-98-5P 75018-08-5P  
 78605-07-9P 101445-25-4P 101579-12-8P  
 104369-40-6P 199783-13-6P 367519-19-5P  
 367519-26-4P 820250-42-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of pyrazines via cyclization, ring transformation,  
 aromatization and substituent modification)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



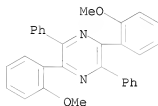
RN 13515-07-6 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-diphenyl- (CA INDEX NAME)



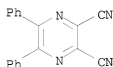
RN 21885-52-9 CAPLUS

CN Pyrazine, 2,5-bis(2-methoxyphenyl)-3,6-diphenyl- (9CI) (CA INDEX NAME)



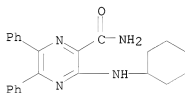
RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



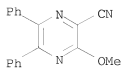
RN 64344-98-5 CAPLUS

CN Pyrazinecarboxamide, 3-(cyclohexylamino)-5,6-diphenyl- (9CI) (CA INDEX NAME)



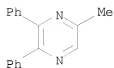
RN 75018-08-5 CAPLUS

CN Pyrazinecarbonitrile, 3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



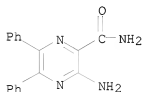
RN 78605-07-9 CAPLUS

CN Pyrazine, 5-methyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



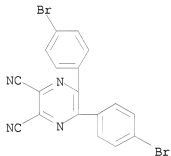
RN 101445-25-4 CAPLUS

CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



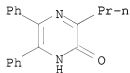
RN 101579-12-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



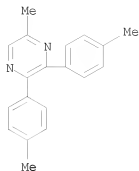
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CN 2(1H)-Pyrazinone, 5,6-diphenyl-3-propyl- (CA INDEX NAME)

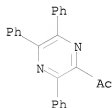


RN 199783-13-6 CAPLUS

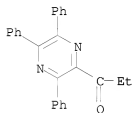
CN Pyrazine, 5-methyl-2,3-bis(4-methylphenyl)- (CA INDEX NAME)



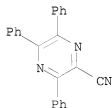
RN 367519-19-5 CAPLUS  
 CN Ethanone, 1-(triphenylpyrazinyl)- (9CI) (CA INDEX NAME)



RN 367519-26-4 CAPLUS  
 CN 1-Propanone, 1-(triphenylpyrazinyl)- (9CI) (CA INDEX NAME)



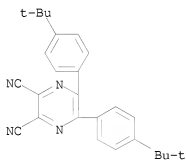
RN 820250-42-8 CAPLUS  
 CN Pyrazinecarbonitrile, triphenyl- (9CI) (CA INDEX NAME)



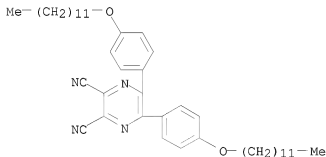
REFERENCE COUNT: 506 THERE ARE 506 CITED REFERENCES AVAILABLE FOR  
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L14 ANSWER 90 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:202763 CAPLUS  
 DOCUMENT NUMBER: 142:272664  
 TITLE: Product class 9: phthalocyanines and related compounds  
 AUTHOR(S): McKeown, N. B.  
 CORPORATE SOURCE: Dept. of Chemistry, University of Manchester,  
 Manchester, M13 9PL, UK  
 SOURCE: Science of Synthesis (2004), 17, 1237-1368  
 CODEN: SSCYJ9  
 PUBLISHER: Georg Thieme Verlag  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: English  
 AB A review. Preparation is considered for unsubstituted phthalocyanine, metal  
 phthalocyanine complexes and their substituted sym. and unsym. derivs.  
 IT 144828-31-9 159254-45-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of phthalocyanines and their metal complexes)  
 RN 144828-31-9 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1,1-dimethylethyl)phenyl]- (CA  
 INDEX NAME)



RN 159254-45-2 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dodecyloxy)phenyl]- (CA INDEX  
 NAME)



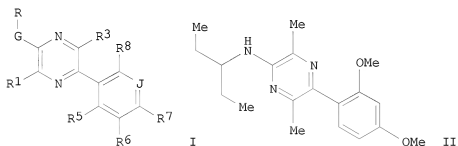
REFERENCE COUNT: 682 THERE ARE 682 CITED REFERENCES AVAILABLE FOR  
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L14 ANSWER 91 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:182851 CAPLUS  
 DOCUMENT NUMBER: 140:217663  
 TITLE: Preparation of 5-substituted-2-arylpyrazines as  
 modulators of CRF receptors  
 INVENTOR(S): Yoon, Taeyoung; Ge, Ping; Delombaert, Stephane;



PATENT ASSIGNEE(S): Horvath, Raymond  
 SOURCE: Neurogen Corporation, USA  
 PCT Int. Appl., 127 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004018437	A1	20040304	WO 2003-US26141	20030820
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2496197	A1	20040304	CA 2003-2496197	20030820
AU 2003258307	A2	20040311	AU 2003-258307	20030820
AU 2003258307	A1	20040311		
US 2004106620	A1	20040603	US 2003-645312	20030820
US 7179807	B2	20070220		
EP 1554258	A1	20050720	EP 2003-793200	20030820
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
JP 2006509729	T	20060323	JP 2004-529752	20030820
US 2007043056	A1	20070222	US 2006-585405	20061023
PRIORITY APPLN. INFO.:			US 2002-405013P	P 20020820
			US 2003-645312	A1 20030820
			WO 2003-US26141	W 20030820
OTHER SOURCE(S):	MARPAT 140:217663			
GI				



AB Title compds. I [G = O, NH; R = alkyl; R1, R3 = H, alkyl, halo, haloalkyl, etc.; R5 = halo, alkyl, alkoxy; R6 = H, halo, alkyl, alkoxy; R7 = H, halo, CN, alkyl, alkoxy, haloalkyl, etc.; R8 = H, halo, alkyl, alkoxy; J = N, C(H, halo, alkyl).] are prepared For instance, N-(1-ethylpropyl)-3,6-dimethylpyrazine-2-amine (preparation given) is brominated (CH2Cl2, NBS); the resulting 5-bromo derivative is coupled to 2,4-dimethoxybenzeneboronic acid (diglyme, (PPh3)4Pd, Na2CO3) to give II. Selected compds. of the invention have Ki < 1  $\mu$ M for the CRF1 receptor. Compds. I are useful in the treatment of a number of CNS disorders, particularly stress, anxiety, depression, cardiovascular and eating disorders.

IT 666253-28-7P, [5-(5-Ethyl-6-methoxy-2-methyl-pyridin-3-yl)-3-methoxy-6-methylpyrazin-2-yl] (1-ethylpropyl)amine 666253-51-6P, 2-(2,6-Dimethoxypyridin-3-yl)-3,6-diethyl-5-(1-ethylpropoxy)pyrazine 666253-52-7P, 2-(2,6-Dimethoxypyridin-3-yl)-3,6-diethyl-5-(1-isopropyl-2-methylpropoxy)pyrazine 666253-63-0P, 5-[3,6-Diethyl-5-(1-isopropyl-2-methylpropoxy)pyrazin-2-yl]-6-methoxy-N,N-dimethylpyridin-2-amine 666254-03-1P, 5-[6-(Dimethylamino)-2-ethylpyridin-3-yl]-N-(1-ethylpropyl)-3-methoxy-6-methylpyrazin-2-amine 666254-05-3P, 6-(2,6-Dimethoxypyridin-3-yl)-3-[(1-ethylpropyl)amino]-5-methylpyrazine-2-carbonitrile 666254-10-0P, 5-[6-(Dimethylamino)-2-ethylpyridin-3-yl]-6-ethyl-N-(1-ethylpropyl)-3-methoxypyrazin-2-amine 666254-17-7P, 5-[6-(Dimethylamino)-2,4-dimethylpyridin-3-yl]-N-(1-ethylpropyl)-3-methoxy-6-methylpyrazin-2-amine 666254-20-2P, N-(1-Ethylpropyl)-5-(6-isopropyl-2-methoxypyridin-3-yl)-3-methoxypyrazin-2-amine 666254-26-8P, 2,5-Diethyl-3-(1-ethylpropoxy)-6-(6-isopropyl-2-methoxypyridin-3-yl)pyrazine 666254-40-6P, 2,5-Diethyl-3-(1-ethylbutoxy)-6-(6-isopropyl-2-methoxypyridin-3-yl)pyrazine 666254-41-7P, 5-[6-(Dimethylamino)-4-methylpyridin-3-yl]-N-(1-ethylpropyl)-3-methoxy-6-methylpyrazin-2-amine 666254-42-8P, 5-[6-(Dimethylamino)-2-methoxypyridin-3-yl]-N-(1-ethylpropyl)-3-methoxy-6-methylpyrazin-2-amine 666254-52-0P, 5-(2,6-Dimethoxypyridin-3-yl)-N-(1-ethylpropyl)-3-methoxy-6-methylpyrazin-2-amine 666254-53-1P, 5-(2,6-Dimethoxypyridin-3-yl)-6-ethyl-N-(1-ethylpropyl)-3-methoxypyrazin-2-amine 666254-60-0P, 2,5-Diethyl-3-(1-ethylpropoxy)-6-[2-methoxy-6-(trifluoromethyl)pyridin-3-yl]pyrazine 666254-61-1P, N-(1-Ethylpropyl)-5-(6-isopropyl-4-methoxypyridin-3-yl)-3-methoxy-6-methylpyrazin-2-amine 666254-62-2P, 5-(2-Chloro-6-isopropylpyridin-3-yl)-6-ethyl-N-(1-ethylpropyl)-3-methoxypyrazin-2-amine 666254-77-9P, N-(1-Ethylpropyl)-3-methoxy-5-[2-methoxy-6-(trifluoromethyl)pyridin-3-yl]-6-methylpyrazin-2-amine 666254-78-0P, 6-Ethyl-N-(1-ethylpropyl)-3-methoxy-5-[2-methoxy-6-(trifluoromethyl)pyridin-3-yl]pyrazin-2-amine 666254-81-5P, N-(1-Ethylpropyl)-5-(6-isopropyl-2-methoxypyridin-3-yl)-3-methoxy-6-methylpyrazin-2-amine 666254-82-6P, 6-Ethyl-N-(1-ethylpropyl)-5-(6-isopropyl-2-methoxypyridin-3-yl)-3-methoxypyrazin-2-amine 666254-87-1P, 6-Ethyl-N-(1-ethylpropyl)-3-methoxy-5-(2-methoxy-6-(pyrrolidin-1-yl)pyridin-3-yl)pyrazin-2-amine 666254-89-3P, 5-[6-(Dimethylamino)-2-methylpyridin-3-yl]-N-(1-ethylpropyl)-3-methoxy-6-methylpyrazin-2-amine 666255-33-0P, [5-[3,6-Diethyl-5-(1-ethylpropoxy)pyrazin-2-yl]-4-methoxypyridin-2-yl]dimethylamine 666255-34-1P, [5-(6-Dimethylamino-4-methoxypyridin-3-yl)-3,6-diethylpyrazin-2-yl] (1-ethylpropyl)amine 666255-35-2P, [5-(6-Dimethylamino-4-methoxypyridin-3-yl)-3-ethyl-6-methoxypyrazin-2-yl] (1-ethylpropyl)amine 666255-36-3P, [5-[3,6-Diethyl-5-(1-ethylpropoxy)pyrazin-2-yl]-4-isopropoxypyridin-2-yl]dimethylamine 666255-37-4P, [5-(6-Dimethylamino-4-isopropoxypyridin-3-yl)-3,6-diethylpyrazin-2-yl] (1-ethylpropyl)amine 666255-38-5P, [5-(6-Dimethylamino-4-isopropoxypyridin-3-yl)-3-ethyl-6-methoxypyrazin-2-yl] (1-ethylpropyl)amine 666255-40-9P, [5-(6-Dimethylamino-4-propoxypyridin-3-yl)-3,6-diethylpyrazin-2-yl] (1-ethylpropyl)amine 666255-41-0P, [5-(4-Cyclopentylloxy-6-dimethylaminopyridin-3-yl)-3,6-diethylpyrazin-2-yl] (1-ethylpropyl)amine 666255-42-1P, [5-(6-Dimethylamino-4-ethoxypyridin-3-yl)-3,6-diethylpyrazin-2-yl] (1-ethylpropyl)amine 666255-43-2P, [5-(6-Dimethylamino-4-trifluoromethylpyridin-3-yl)-3,6-diethylpyrazin-2-yl] (1-ethylpropyl)amine 666255-44-3P, [5-(6-Dimethylamino-4-ethylpyridin-3-yl)-3-ethyl-6-methoxypyrazin-2-yl] (1-ethylpropyl)amine 666255-45-4P, [5-(6-Dimethylamino-4-ethylpyridin-3-yl)-3,6-diethylpyrazin-2-yl] (1-ethylpropyl)amine 666255-46-5P, [5-(6-Dimethylamino-4-trifluoromethylpyridin-3-yl)-3-ethyl-6-methoxypyrazin-2-yl] (1-ethylpropyl)amine 666255-47-6P, [5-(6-Diethylamino-4-methoxypyridin-3-yl)-3,6-diethylpyrazin-2-yl] (1-

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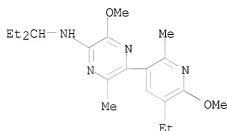
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3-methoxypyrazin-2-yl]-6-methylpyridin-3-yl]ethanol 666255-91-OP  
, [3,6-Diethyl-5-(6-isopropyl-2-methylaminopyridin-3-yl)pyrazin-2-yl](1-  
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2-methoxypyridin-3-yl)pyrazin-2-yl](1-ethylpropyl)amine  
666255-95-4P, [3,6-Diethyl-5-(6-ethyl-2-methoxypyridin-3-  
yl)pyrazin-2-yl](1-ethylpropyl)amine 666255-96-5P,  
[6-Chloro-3-ethyl-5-(6-isopropyl-2-methylaminopyridin-3-yl)pyrazin-2-yl](1-  
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[3-Ethyl-5-(2-ethyl-6-isopropylpyridin-3-yl)-6-methoxypyrazin-2-yl](1-  
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666256-01-5P, 2-[3-[5-(1-Ethylpropylamino)-6-methoxy-3-  
methylpyrazin-2-yl]-6-isopropylpyridin-2-ylamino]ethanol  
666256-02-6P, 3-[3-[5-(1-Ethylpropylamino)-6-methoxy-3-  
methylpyrazin-2-yl]-6-isopropylpyridin-2-ylamino]propan-1-ol  
666256-03-7P, (1-Ethylpropyl)[5-(6-isopropyl-2-(morpholin-4-  
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, (1-Ethylpropyl)[5-[6-isopropyl-2-(2-methoxyethylamino)pyridin-3-yl]-3-  
methoxy-6-methylpyrazin-2-yl]amine 666256-05-9P,  
(1-Ethylpropyl)[5-[6-isopropyl-2-(3-(morpholin-4-yl)propyl)amino]pyridin-  
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(1-Ethylpropyl)[5-(6-isopropyl-2-methylaminopyridin-3-yl)-3-methoxy-6-  
methylpyrazin-2-yl]amine 666256-08-2P, [3-Ethyl-5-(2-ethyl-6-  
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666256-12-8P, [3-Ethyl-5-(6-isopropyl-2-methylaminopyridin-3-yl)-6-  
methoxypyrazin-2-yl](1-ethylpropyl)amine 666256-13-9P,  
3-[3-[6-Ethyl-5-(1-ethylpropylamino)-3-methoxypyrazin-2-yl]-6-  
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666256-16-2P, N-[3-[5-(1-Ethylpropylamino)-6-methoxy-3-  
methylpyrazin-2-yl]-6-isopropylpyridin-2-yl]-N',N'-dimethylpropane-1,3-  
diamine 666256-19-5P, [5-(6-Dimethylamino-4-  
trifluoromethylpyridin-3-yl)-3-methoxy-6-methylpyrazin-2-yl](1-  
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3-yl)-3-methoxy-6-methylpyrazin-2-yl](1-ethylpropyl)amine  
666256-21-9P, [6-Ethyl-5-(2-ethyl-6-isopropylpyridin-3-yl)-3-  
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[6-Ethyl-5-(6-isopropyl-2-methylaminopyridin-3-yl)-3-methoxypyrazin-2-  
yl](1-ethylpropyl)amine 666256-24-2P, 3-[3-[3-Ethyl-5-(1-  
ethylpropylamino)-6-methoxypyrazin-2-yl]-6-isopropylpyridin-2-  
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ethylpropyl)amine 666256-26-4P, [5-(4-Ethyl-6-isopropylpyridin-3-  
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666256-27-5P, [5-(2-Ethyl-6-isopropoxy-pyridin-3-yl)-3-methoxy-6-  
methylpyrazin-2-yl](1-ethylpropyl)amine 666256-28-6P,  
[6-Ethyl-5-(6-isopropyl-2-methylpyridin-3-yl)-3-methoxypyrazin-2-yl](1-  
ethylpropyl)amine 666256-29-7P, (1-Ethylpropyl)[5-(6-isopropyl-2-  
methylpyridin-3-yl)-3-methoxy-6-methylpyrazin-2-yl]amine  
666256-30-0P, (1-Ethylbutyl)[5-(2-ethyl-6-isopropylpyridin-3-yl)-3-  
methoxy-6-methylpyrazin-2-yl]amine 666256-31-1P,  
[6-Ethyl-5-[4-ethyl-6-(N-ethyl-N-methylamino)pyridin-3-yl]-3-  
methoxypyrazin-2-yl](1-ethylpropyl)amine 666256-32-2P,  
(1-Ethylbutyl)[5-(6-isopropyl-2-methylaminopyridin-3-yl)-3-methoxy-6-  
methylpyrazin-2-yl]amine 666256-33-3P, [5-(2-Ethylamino-6-  
isopropylpyridin-3-yl)-3-methoxy-6-methylpyrazin-2-yl](1-ethylpropyl)amine  
666256-34-4P, 3-[5-(2-Dimethylamino-6-isopropylpyridin-3-yl)-3-  
methoxy-6-methylpyrazin-2-yl](1-ethylpropyl)amine 666256-35-5P,

(1-Ethylbutyl) [5-[6-isopropyl-2-((3-(morpholin-4-yl)propyl)amino)pyridin-3-yl]-3-methoxy-6-methylpyrazin-2-yl]amine 666256-36-6P,  
 [5-(4-Ethyl-6-isopropoxy-pyridin-3-yl)-3-methoxy-6-methylpyrazin-2-yl] (1-ethylpropyl)amine 666256-37-7P, [5-(6-Ethoxy-4-ethylpyridin-3-yl)-3-methoxy-6-methylpyrazin-2-yl] (1-ethylpropyl)amine  
 666256-39-9P, N-(1-Ethylpropyl)-3-methoxy-5-(2-methoxy-6-(pyrrolidin-1-yl)pyridin-3-yl)-6-methylpyrazin-2-amine  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of 5-substituted-2-arylpyrazines as modulators of CRF receptors)

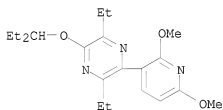
RN 666253-28-7 CAPLUS

CN Pyrazinamine, 5-(5-ethyl-6-methoxy-2-methyl-3-pyridinyl)-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



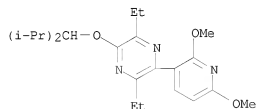
RN 666253-51-6 CAPLUS

CN Pyrazine, 2-(2,6-dimethoxy-3-pyridinyl)-3,6-diethyl-5-(1-ethylpropoxy)- (CA INDEX NAME)



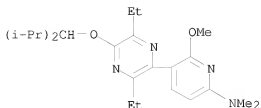
RN 666253-52-7 CAPLUS

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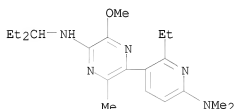


RN 666253-63-0 CAPLUS

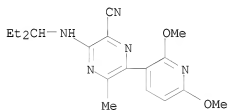
CN 2-Pyridinamine, 5-[3,6-diethyl-5-[2-methyl-1-(1-methylethyl)propoxy]pyrazinyl]-6-methoxy-N,N-dimethyl- (9CI) (CA INDEX NAME)



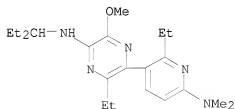
RN 666254-03-1 CAPLUS  
 CN Pyrazinamine, 5-[6-(dimethylamino)-2-ethyl-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



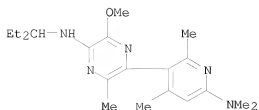
RN 666254-05-3 CAPLUS  
 CN Pyrazinecarbonitrile, 6-(2,6-dimethoxy-3-pyridinyl)-3-[(1-ethylpropyl)amino]-5-methyl- (9CI) (CA INDEX NAME)



RN 666254-10-0 CAPLUS  
 CN Pyrazinamine, 5-[6-(dimethylamino)-2-ethyl-3-pyridinyl]-6-ethyl-N-(1-ethylpropyl)-3-methoxy- (9CI) (CA INDEX NAME)

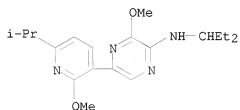


RN 666254-17-7 CAPLUS  
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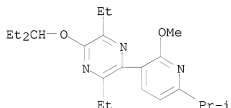
RN 666254-20-2 CAPLUS

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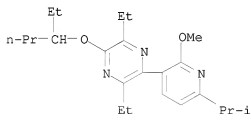
RN 666254-26-8 CAPLUS

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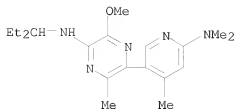
RN 666254-40-6 CAPLUS

CN Pyrazine, 2,5-diethyl-3-(1-ethylbutoxy)-6-[2-methoxy-6-(1-methylethyl)-3-pyridinyl]- (CA INDEX NAME)

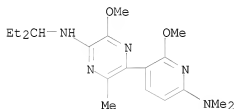


RN 666254-41-7 CAPLUS

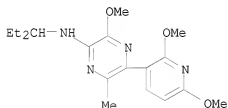
CN Pyrazinamine, 5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



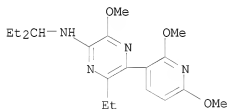
RN 666254-42-8 CAPLUS  
 CN Pyrazinamine, 5-[6-(dimethylamino)-2-methoxy-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



RN 666254-52-0 CAPLUS  
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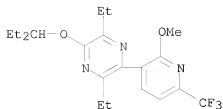


RN 666254-53-1 CAPLUS  
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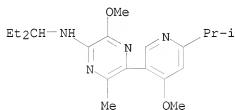


RN 666254-60-0 CAPLUS  
 CN Pyrazine, 2,5-diethyl-3-(1-ethylpropoxy)-6-[2-methoxy-6-(trifluoromethyl)-3-pyridinyl]- (CA INDEX NAME)

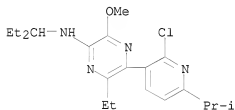




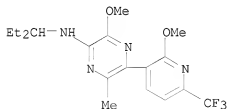
RN 666254-61-1 CAPLUS  
 CN Pyrazinamine, N-(1-ethylpropyl)-3-methoxy-5-[4-methoxy-6-(1-methylethyl)-3-pyridinyl]-6-methyl- (9CI) (CA INDEX NAME)



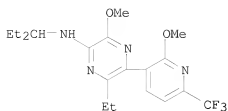
RN 666254-62-2 CAPLUS  
 CN Pyrazinamine, 5-[2-chloro-6-(1-methylethyl)-3-pyridinyl]-6-ethyl-N-(1-ethylpropyl)-3-methoxy- (9CI) (CA INDEX NAME)



RN 666254-77-9 CAPLUS  
 CN Pyrazinamine, N-(1-ethylpropyl)-3-methoxy-5-[2-methoxy-6-(trifluoromethyl)-3-pyridinyl]-6-methyl- (9CI) (CA INDEX NAME)

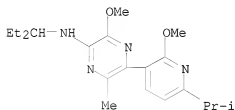


RN 666254-78-0 CAPLUS  
 CN Pyrazinamine, 6-ethyl-N-(1-ethylpropyl)-3-methoxy-5-[2-methoxy-6-(trifluoromethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



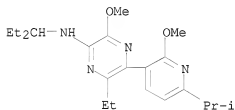
RN 666254-81-5 CAPLUS

CN Pyrazinamine, N-(1-ethylpropyl)-3-methoxy-5-[2-methoxy-6-(1-methylethyl)-3-pyridinyl]-6-methyl- (9CI) (CA INDEX NAME)



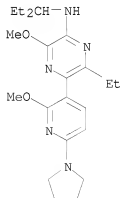
RN 666254-82-6 CAPLUS

CN Pyrazinamine, 6-ethyl-N-(1-ethylpropyl)-3-methoxy-5-[2-methoxy-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)

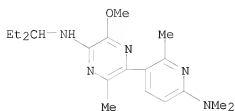


RN 666254-87-1 CAPLUS

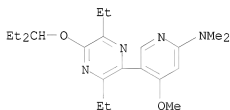
CN Pyrazinamine, 6-ethyl-N-(1-ethylpropyl)-3-methoxy-5-[2-methoxy-6-(1-pyrrolidinyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



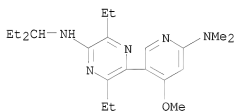
RN 666254-89-3 CAPLUS  
 CN Pyrazinamine, 5-[6-(dimethylamino)-2-methyl-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



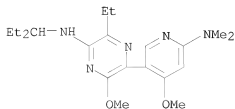
RN 666255-33-0 CAPLUS  
 CN 2-Pyridinamine, 5-[3,6-diethyl-5-(1-ethylpropoxy)pyrazinyl]-4-methoxy-N,N-dimethyl- (9CI) (CA INDEX NAME)



RN 666255-34-1 CAPLUS  
 CN Pyrazinamine, 5-[6-(dimethylamino)-4-methoxy-3-pyridinyl]-3,6-diethyl-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)

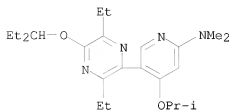


RN 666255-35-2 CAPLUS  
 CN Pyrazinamine, 5-[6-(dimethylamino)-4-methoxy-3-pyridinyl]-3-ethyl-N-(1-ethylpropyl)-6-methoxy- (9CI) (CA INDEX NAME)



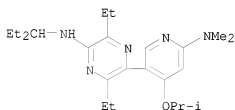
RN 666255-36-3 CAPLUS  
 CN 2-Pyridinamine, 5-[3,6-diethyl-5-(1-ethylpropoxy)pyrazinyl]-N,N-dimethyl-4-

(1-methylethoxy)- (9CI) (CA INDEX NAME)



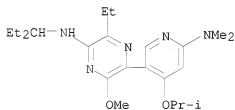
RN 666255-37-4 CAPLUS

CN    Pyrazinamine, 5-[6-(dimethylamino)-4-(1-methylethoxy)-3-pyridinyl]-3,6-diethyl-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)



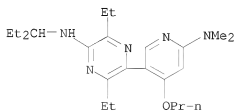
RN 666255-38-5 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-4-(1-methylethoxy)-3-pyridinyl]-3-ethyl-N-(1-ethylpropyl)-6-methoxy- (9CI) (CA INDEX NAME)



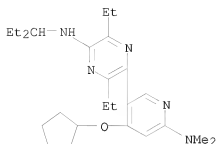
RN 666255-40-9 CAPLUS

CN    Pyrazinamine, 5-[6-(dimethylamino)-4-propoxy-3-pyridinyl]-3,6-diethyl-N-(1-ethylpropyl)- (9CI)    (CA INDEX NAME)

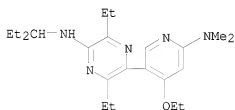


RN 666255-41-0 CAPLUS

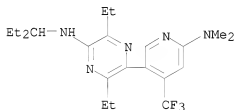
CN    Pyrazinamine, 5-[4-(cyclopentyloxy)-6-(dimethylamino)-3-pyridinyl]-3,6-diethyl-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)



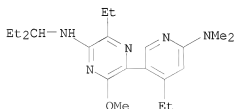
RN 666255-42-1 CAPLUS  
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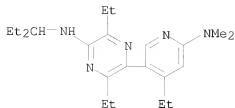
RN 666255-43-2 CAPLUS  
 CN Pyrazinamine, 5-[6-(dimethylamino)-4-(trifluoromethyl)-3-pyridinyl]-3,6-diethyl-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)



RN 666255-44-3 CAPLUS  
 CN Pyrazinamine, 5-[6-(dimethylamino)-4-ethyl-3-pyridinyl]-3-ethyl-N-(1-ethylpropyl)-6-methoxy- (9CI) (CA INDEX NAME)

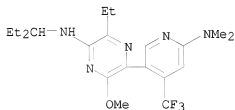


RN 666255-45-4 CAPLUS  
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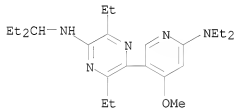
RN 666255-46-5 CAPLUS

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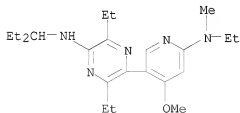
RN 666255-47-6 CAPLUS

CN Pyrazinamine, 5-[6-(diethylamino)-4-methoxy-3-pyridinyl]-3,6-diethyl-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)



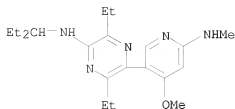
RN 666255-48-7 CAPLUS

CN Pyrazinamine, 3,6-diethyl-5-[6-(ethylmethylamino)-4-methoxy-3-pyridinyl]-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)

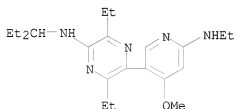


RN 666255-49-8 CAPLUS

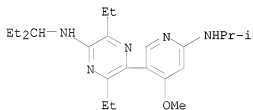
CN Pyrazinamine, 3,6-diethyl-N-(1-ethylpropyl)-5-[4-methoxy-6-(methylamino)-3-pyridinyl]- (9CI) (CA INDEX NAME)



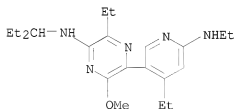
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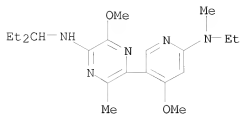
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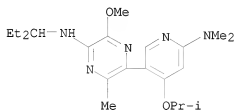
RN 666255-52-3 CAPLUS  
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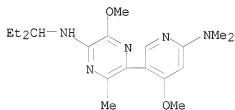
RN 666255-53-4 CAPLUS  
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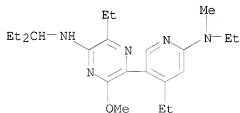
RN 666255-54-5 CAPLUS  
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RN 666255-55-6 CAPLUS  
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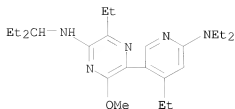


RN 666255-56-7 CAPLUS  
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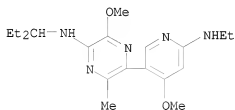
RN 666255-57-8 CAPLUS  
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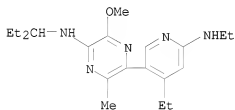
RN 666255-58-9 CAPLUS

CN Pyrazinamine, 5-[6-(ethylamino)-4-methoxy-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



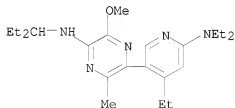
RN 666255-59-0 CAPLUS

CN Pyrazinamine, 5-[4-ethyl-6-(ethylamino)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



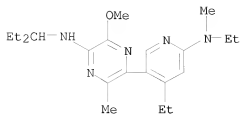
RN 666255-60-3 CAPLUS

CN Pyrazinamine, 5-[6-(diethylamino)-4-ethyl-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



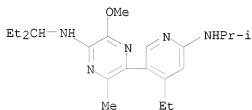
RN 666255-61-4 CAPLUS

CN Pyrazinamine, 5-[4-ethyl-6-(ethylmethylamino)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



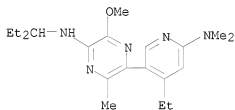
RN 666255-62-5 CAPLUS

CN Pyrazinamine, 5-[4-ethyl-6-[(1-methylethyl)amino]-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



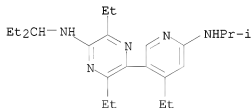
RN 666255-63-6 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-4-ethyl-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



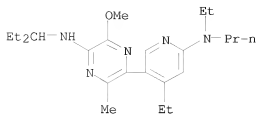
RN 666255-64-7 CAPLUS

CN Pyrazinamine, 3,6-diethyl-5-[4-ethyl-6-[(1-methylethyl)amino]-3-pyridinyl]-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)



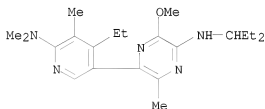
RN 666255-65-8 CAPLUS

CN Pyrazinamine, 5-[4-ethyl-6-(ethylpropylamino)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



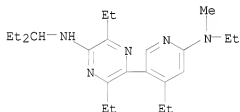
RN 666255-66-9 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-4-ethyl-5-methyl-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



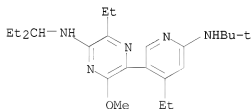
RN 666255-68-1 CAPLUS

CN Pyrazinamine, 3,6-diethyl-5-[4-ethyl-6-(ethylmethylamino)-3-pyridinyl]-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)



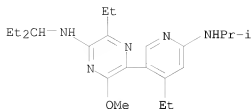
RN 666255-69-2 CAPLUS

CN Pyrazinamine, 5-[6-[(1,1-dimethylethyl)amino]-4-ethyl-3-pyridinyl]-3-ethyl-N-(1-ethylpropyl)-6-methoxy- (9CI) (CA INDEX NAME)



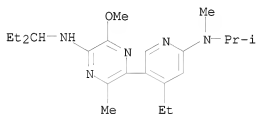
RN 666255-70-5 CAPLUS

CN Pyrazinamine, 3-ethyl-5-[4-ethyl-6-[(1-methylethyl)amino]-3-pyridinyl]-N-(1-ethylpropyl)-6-methoxy- (9CI) (CA INDEX NAME)



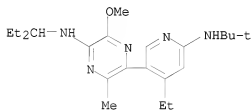
RN 666255-71-6 CAPLUS

CN Pyrazinamine, 5-[4-ethyl-6-[methyl(1-methylethyl)amino]-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



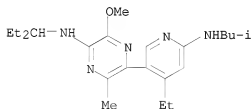
RN 666255-72-7 CAPLUS

CN Pyrazinamine, 5-[6-[(1,1-dimethylethyl)amino]-4-ethyl-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



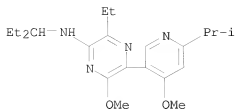
RN 666255-73-8 CAPLUS

CN Pyrazinamine, 5-[4-ethyl-6-[(2-methylpropyl)amino]-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



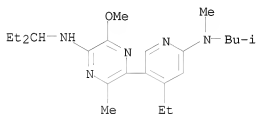
RN 666255-74-9 CAPLUS

CN Pyrazinamine, 3-ethyl-N-(1-ethylpropyl)-6-methoxy-5-[4-methoxy-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



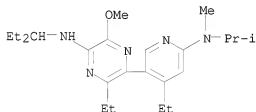
RN 666255-75-0 CAPLUS

CN Pyrazinamine, 5-[4-ethyl-6-[methyl(2-methylpropyl)amino]-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



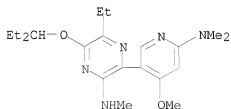
RN 666255-76-1 CAPLUS

CN Pyrazinamine, 6-ethyl-5-[4-ethyl-6-[methyl(1-methylethyl)amino]-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy- (9CI) (CA INDEX NAME)



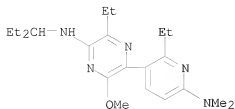
RN 666255-80-7 CAPLUS

CN Pyrazinamine, 3-[6-(dimethylamino)-4-methoxy-3-pyridinyl]-5-ethyl-6-(1-ethylpropoxy)-N-methyl- (9CI) (CA INDEX NAME)



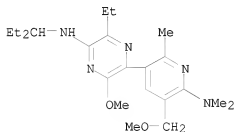
RN 666255-81-8 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-2-ethyl-3-pyridinyl]-3-ethyl-N-(1-ethylpropyl)-6-methoxy- (9CI) (CA INDEX NAME)



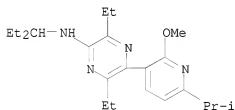
RN 666255-83-0 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-5-(methoxymethyl)-2-methyl-3-pyridinyl]-3-ethyl-N-(1-ethylpropyl)-6-methoxy- (9CI) (CA INDEX NAME)



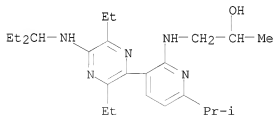
RN 666255-84-1 CAPLUS

CN Pyrazinamine, 3,6-diethyl-N-(1-ethylpropyl)-5-[2-methoxy-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



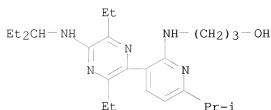
RN 666255-85-2 CAPLUS

CN 2-Propanol, 1-[[3-[3,6-diethyl-5-[(1-ethylpropyl)amino]pyrazinyl]-6-(1-methylethyl)-2-pyridinyl]amino]- (9CI) (CA INDEX NAME)



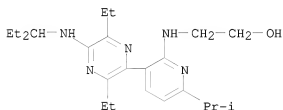
RN 666255-86-3 CAPLUS

CN 1-Propanol, 3-[[3-[3,6-diethyl-5-[(1-ethylpropyl)amino]pyrazinyl]-6-(1-methylethyl)-2-pyridinyl]amino]- (9CI) (CA INDEX NAME)



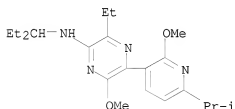
RN 666255-87-4 CAPLUS

CN Ethanol, 2-[[3-[3,6-diethyl-5-[(1-ethylpropyl)amino]pyrazinyl]-6-(1-methylethyl)-2-pyridinyl]amino]- (9CI) (CA INDEX NAME)



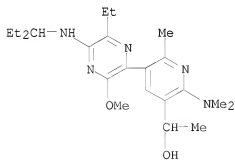
RN 666255-88-5 CAPLUS

CN Pyrazinamine, 3-ethyl-N-(1-ethylpropyl)-6-methoxy-5-[2-methoxy-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



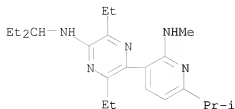
RN 666255-89-6 CAPLUS

CN 3-Pyridinemethanol, 2-(dimethylamino)-5-[6-ethyl-5-[(1-ethylpropyl)amino]-3-methoxypyrazinyl]-α,6-dimethyl- (9CI) (CA INDEX NAME)

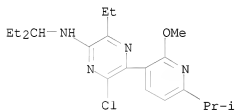


RN 666255-91-0 CAPLUS

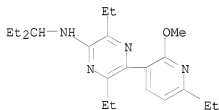
CN Pyrazinamine, 3,6-diethyl-N-(1-ethylpropyl)-5-[2-(methylamino)-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



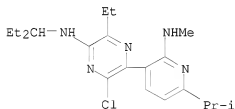
RN 666255-94-3 CAPLUS  
 CN Pyrazinamine, 6-chloro-3-ethyl-N-(1-ethylpropyl)-5-[2-methoxy-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



RN 666255-95-4 CAPLUS  
 CN Pyrazinamine, 3,6-diethyl-5-(6-ethyl-2-methoxy-3-pyridinyl)-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)

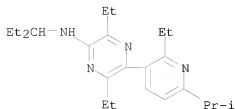


RN 666255-96-5 CAPLUS  
 CN Pyrazinamine, 6-chloro-3-ethyl-N-(1-ethylpropyl)-5-[2-(methylamino)-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)

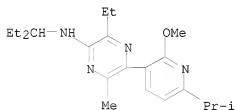


RN 666255-97-6 CAPLUS  
 CN Pyrazinamine, 3,6-diethyl-5-[2-ethyl-6-(1-methylethyl)-3-pyridinyl]-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)

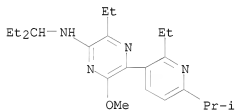




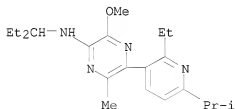
RN 666255-98-7 CAPLUS  
 CN Pyrazinamine, 3-ethyl-N-(1-ethylpropyl)-5-[2-methoxy-6-(1-methylethyl)-3-pyridinyl]-6-methyl- (9CI) (CA INDEX NAME)



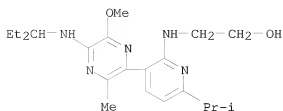
RN 666255-99-8 CAPLUS  
 CN Pyrazinamine, 3-ethyl-5-[2-ethyl-6-(1-methylethyl)-3-pyridinyl]-N-(1-ethylpropyl)-6-methoxy- (9CI) (CA INDEX NAME)



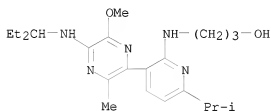
RN 666256-00-4 CAPLUS  
 CN Pyrazinamine, 5-[2-ethyl-6-(1-methylethyl)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



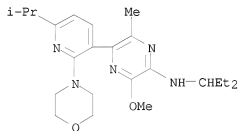
RN 666256-01-5 CAPLUS  
 CN Ethanol, 2-[1-[3-[5-[1-(1-ethylpropyl)amino]-6-methoxy-3-methylpyrazinyl]-6-(1-methylethyl)-2-pyridinyl]amino]- (9CI) (CA INDEX NAME)



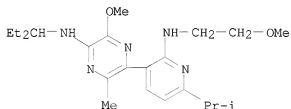
RN 666256-02-6 CAPLUS  
 CN 1-Propanol, 3-[[3-[5-[(1-ethylpropyl)amino]-6-methoxy-3-methylpyrazinyl]-6-(1-methylethyl)-2-pyridinyl]amino]- (9CI) (CA INDEX NAME)



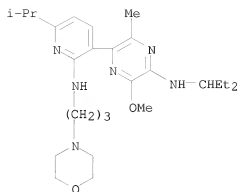
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 CN Pyrazinamine, N-(1-ethylpropyl)-3-methoxy-6-methyl-5-[6-(1-methylethyl)-2-(4-morpholinyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



RN 666256-04-8 CAPLUS  
 CN Pyrazinamine, N-(1-ethylpropyl)-3-methoxy-5-[2-[(2-methoxyethyl)amino]-6-(1-methylethyl)-3-pyridinyl]-6-methyl- (9CI) (CA INDEX NAME)

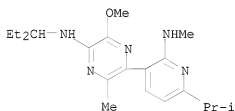


RN 666256-05-9 CAPLUS  
 CN 4-Morpholinepropanamine, N-[3-[5-[(1-ethylpropyl)amino]-6-methoxy-3-methylpyrazinyl]-6-(1-methylethyl)-2-pyridinyl]- (9CI) (CA INDEX NAME)



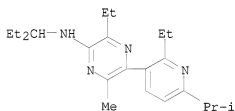
RN 666256-06-0 CAPLUS

CN Pyrazinamine, N-(1-ethylpropyl)-3-methoxy-6-methyl-5-[2-(methylamino)-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



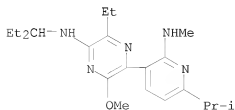
RN 666256-08-2 CAPLUS

CN Pyrazinamine, 3-ethyl-5-[2-ethyl-6-(1-methylethyl)-3-pyridinyl]-N-(1-ethylpropyl)-6-methyl- (9CI) (CA INDEX NAME)



RN 666256-12-8 CAPLUS

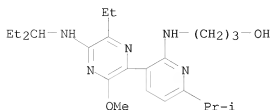
CN Pyrazinamine, 3-ethyl-N-(1-ethylpropyl)-6-methoxy-5-[2-(methylamino)-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



RN 666256-13-9 CAPLUS

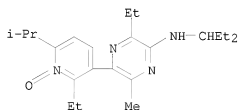
CN 1-Propanol, 3-[3-[6-ethyl-5-[(1-ethylpropyl)amino]-3-methoxypyrazinyl]-6-

(1-methylethyl)-2-pyridinyl]amino]- (9CI) (CA INDEX NAME)



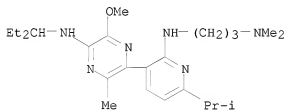
RN 666256-15-1 CAPLUS

CN Pyrazinamine, 3-ethyl-5-[2-ethyl-6-(1-methylethyl)-1-oxido-3-pyridinyl]-N-(1-ethylpropyl)-6-methyl- (9CI) (CA INDEX NAME)



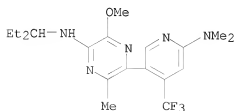
RN 666256-16-2 CAPLUS

CN 1,3-Propanediamine, N'-[3-[5-[(1-ethylpropyl)amino]-6-methoxy-3-methylpyrazinyl]-6-(1-methylethyl)-2-pyridinyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



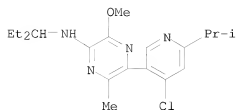
RN 666256-19-5 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-4-(trifluoromethyl)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)

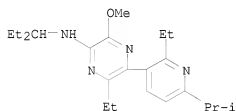


RN 666256-20-8 CAPLUS

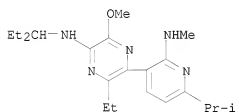
CN Pyrazinamine, 5-[4-chloro-6-(1-methylethyl)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



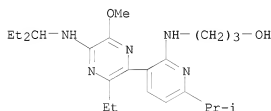
RN 666256-21-9 CAPLUS  
 CN Pyrazinamine, 6-ethyl-5-[2-ethyl-6-(1-methylethyl)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy- (9CI) (CA INDEX NAME)



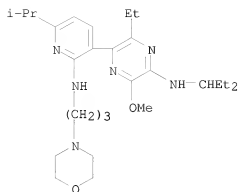
RN 666256-23-1 CAPLUS  
 CN Pyrazinamine, 6-ethyl-N-(1-ethylpropyl)-3-methoxy-5-[2-(methylamino)-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



RN 666256-24-2 CAPLUS  
 CN 1-Propanol, 3-[3-[3-ethyl-5-[(1-ethylpropyl)amino]-6-methoxypyrazinyl]-6-(1-methylethyl)-2-pyridinyl]amino]- (9CI) (CA INDEX NAME)

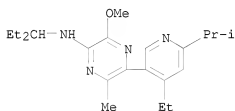


RN 666256-25-3 CAPLUS  
 CN 4-Morpholinepropanamine, N-[3-[3-ethyl-5-[(1-ethylpropyl)amino]-6-methoxypyrazinyl]-6-(1-methylethyl)-2-pyridinyl]- (9CI) (CA INDEX NAME)



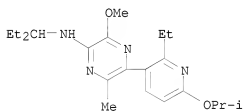
RN 666256-26-4 CAPLUS

CN Pyrazinamine, 5-[4-ethyl-6-(1-methylethyl)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



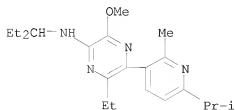
RN 666256-27-5 CAPLUS

CN Pyrazinamine, 5-[2-ethyl-6-(1-methylethoxy)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



RN 666256-28-6 CAPLUS

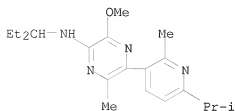
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RN 666256-29-7 CAPLUS

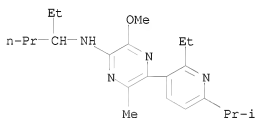
CN Pyrazinamine, N-(1-ethylpropyl)-3-methoxy-6-methyl-5-[2-methyl-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)

methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



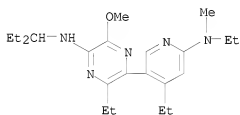
RN 666256-30-0 CAPLUS

CN Pyrazinamine, N-(1-ethylbutyl)-5-[2-ethyl-6-(1-methylethyl)-3-pyridinyl]-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



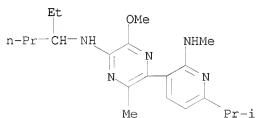
RN 666256-31-1 CAPLUS

CN Pyrazinamine, 6-ethyl-5-[4-ethyl-6-(ethylmethylamino)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy- (9CI) (CA INDEX NAME)



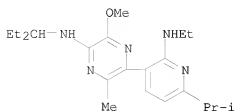
RN 666256-32-2 CAPLUS

CN Pyrazinamine, N-(1-ethylbutyl)-3-methoxy-6-methyl-5-[2-(methylamino)-6-(1-methylethyl)-3-pyridinyl]- (9CI) (CA INDEX NAME)



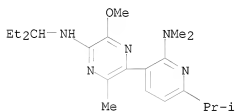
RN 666256-33-3 CAPLUS

CN Pyrazinamine, 5-[2-(ethylamino)-6-(1-methylethyl)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



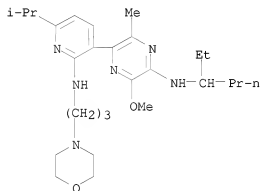
RN 666256-34-4 CAPLUS

CN Pyrazinamine, 5-[2-(dimethylamino)-6-(1-methylethyl)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



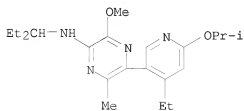
RN 666256-35-5 CAPLUS

CN 4-Morpholinepropanamine, N-[3-[5-[(1-ethylbutyl)amino]-6-methoxy-3-methylpyrazinyl]-6-(1-methylethyl)-2-pyridinyl]- (9CI) (CA INDEX NAME)



RN 666256-36-6 CAPLUS

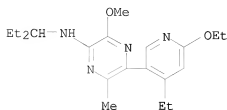
CN Pyrazinamine, 5-[4-ethyl-6-(1-methylethoxy)-3-pyridinyl]-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



RN 666256-37-7 CAPLUS

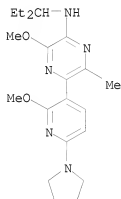


CN Pyrazinamine, 5-(6-ethoxy-4-ethyl-3-pyridinyl)-N-(1-ethylpropyl)-3-methoxy-6-methyl- (9CI) (CA INDEX NAME)



RN 666256-39-9 CAPLUS

CN Pyrazinamine, N-(1-ethylpropyl)-3-methoxy-5-[2-methoxy-6-(1-pyrrolidinyl)-3-pyridinyl]-6-methyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 92 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:153557 CAPLUS

DOCUMENT NUMBER: 140:357147

TITLE: Antihyperglycemic activity of 2-methyl-3,4,5-triaryl-1H-pyrroles in SLM and STZ models

AUTHOR(S): Goel, Atul; Agarwal, Nidhi; Singh, Fateh V.; Sharon, Ashoke; Tiwari, Priti; Dixit, Manish; Pratap, Ramendra; Srivastava, Arvind K.; Maulik, Prakas R.; Ram, Vishnu J.

CORPORATE SOURCE: Division of Medicinal Chemistry, Central Drug Research Institute, Lucknow, 226001, India

SOURCE: Bioorganic & Medicinal Chemistry Letters (2004), 14(5), 1089-1092

CODEN: BMCLE8; ISSN: 0960-894X

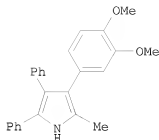
PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 140:357147

GI

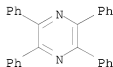


AB Various 3,4,5-triarylpyrroles were synthesized and evaluated for their in vivo antihyperglycemic activity in sucrose-loaded (SLM) and/or streptozotocin-induced (STZ) diabetic rat models. Three of the test compds., 2-methyl-4,5-diphenyl-3-[3-(trifluoromethyl)phenyl]-1H-pyrrole, 3-(4-fluorophenyl)-2-methyl-4,5-diphenyl-1H-pyrrole, and 3-(3,4-dimethoxyphenyl)-2-methyl-4,5-diphenyl-1H-pyrrole (I) showed significant inhibition on postprandial hyperglycemia in normal rats post sucrose loaded. These compds. also showed lowering of plasma glucose level in STZ-induced diabetic rat model.

IT 642-04-6, Tetraphenylpyrazine  
 RL: PAC (Pharmacological activity); BIOL (Biological study)  
 (antidiabetic activity of tetraphenylpyrazine in sucrose-loaded and streptozotocin-induced diabetic rat models)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 93 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:94098 CAPLUS

DOCUMENT NUMBER: 141:190756

TITLE: Synthesis and reactivity of difluoroaromatic compounds containing heterocyclic central groups

AUTHOR(S): Keshtov, M. L.; Keshtova, C. V.; Begretov, M. M.; Tkhakakhov, R. B.

CORPORATE SOURCE: Berbekov Kabardino-Balkar State University, Nal'chik, Russia

SOURCE: Russian Journal of General Chemistry (Translation of Zhurnal Obshchei Khimii) (2003), 73(9), 1476-1480  
 CODEN: RJGCEK; ISSN: 1070-3632

PUBLISHER: MAIK Nauka/Interperiodica Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:190756

AB The reaction of trichloroacetaldehyde with fluorobenzene, followed by a series of transformations, gave 4-fluorobenzil and 4,4'-difluorobenzil which were used in the synthesis of new difluoroarom. compds. with a heterocyclic central group. The <sup>1</sup>H, <sup>13</sup>C, and <sup>19</sup>F NMR spectra of the newly synthesized difluoroarom. compds. were studied. The charge densities on

the carbon atoms attached to fluorine were calculated in terms of the PM3 and AM1 semiempirical approxns. A correlation was found between the charge on C(F) and the corresponding 13C and 19F chemical shifts. Using this correlation, the reactivity of difluoroarom. compds. in nucleophilic substitution reactions was estimated

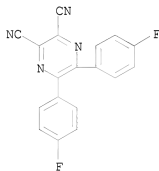
IT 738607-69-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(synthesis and reactivity of difluoroarom. compds. containing heterocyclic central groups)

RN 738607-69-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-fluorophenyl)- (CA INDEX NAME)



REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 94 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:80481 CAPLUS

DOCUMENT NUMBER: 140:133855

TITLE: Process for the preparation of crystalline nanoparticle dispersions

INVENTOR(S): Skantze, Tommy Urban; Lindfors, Per Lennart; Forssen, Sara

PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.; Astrazeneca UK Limited

SOURCE: PCT Int. Appl., 31 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004009057	A1	20040129	WO 2003-GB3044	20030714
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2492709	A1	20040129	CA 2003-2492709	20030714
AU 2003244871	A1	20040209	AU 2003-244871	20030714
BR 2003012631	A	20050419	BR 2003-12631	20030714

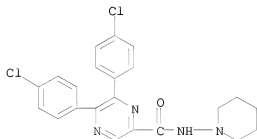
EP 1524964 A1 20050427 EP 2003-738346 20030714  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  
 CN 1668280 A 20050914 CN 2003-817081 20030714  
 JP 2006504511 T 20060209 JP 2004-522299 20030714  
 NZ 537654 A 20060831 NZ 2003-537654 20030714  
 ZA 2004010343 A 20051017 ZA 2004-10343 20041222  
 MX 2005PA00595 A 20050419 MX 2005-PA595 20050113  
 US 2005202092 A1 20050915 US 2005-521617 20050114  
 NO 2005000860 A 20050418 NO 2005-860 20050217  
 PRIORITY APPLN. INFO.: GB 2002-16700 A 20020718  
 WO 2003-GB3044 W 20030714

AB A process for the preparation of a dispersion of crystalline nanoparticles in an aqueous medium comprises combining (i) a first solution comprising a substantially water-insol. substance in a water-miscible organic solvent with; (ii) an aqueous phase comprising water and optionally a stabilizer, to form a dispersion of amorphous particles; and (iii) sonicating the dispersion of amorphous particles for a sufficient period to form crystalline nanoparticles of the substantially water-insol. substance. The process provides nano-crystals with a mean hydrodynamic diameter of <1 µm, particularly <300 nm and is particularly useful for the preparation of nano-crystalline dispersions of pharmaceutical substances. Thus, 0.010 mL of a solution of 100 mM felodipine in dimethylacetamide was added rapidly to 0.990 mL of an aqueous solution containing 0.2% polyvinylpyrrolidone and 0.25 mM sodium dodecyl sulfate under sonication for 30 min. The resulting particles were crystalline with a mean hydrodynamic diameter of 165 nm (no change in particle size was observed over 2 h).

IT 548759-96-2  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (process for preparation of crystalline nanoparticle dispersions)

RN 548759-96-2 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 95 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:63554 CAPLUS  
 DOCUMENT NUMBER: 140:327777  
 TITLE: Kinetics and mechanism of water substitution in the low-spin Fe(II) complex of 4-octasulfophenylpyrazinoporphyrazine  
 AUTHOR(S): Kudrik, Evgeny V.; van Eldik, Rudi; Makarov, Sergei V.  
 CORPORATE SOURCE: Institute for Inorganic Chemistry, University of Erlangen-Nuernberg, Erlangen, 91058, Germany

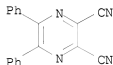
SOURCE: Dalton Transactions (2004), (3), 429-435  
CODEN: DTARAF; ISSN: 1477-9226  
PUBLISHER: Royal Society of Chemistry  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The substitution reaction of the axial-coordinated water by pyridine, pyrazine and 4-CN-pyridine in the low-spin Fe(II) complex of octasulfophenyltetrapyrazinoporphyrazine was studied. Kinetic and thermodyn. parameters for the different reaction steps of the process were determined. On the basis of NMR data and spectrophotometric titrns., a pronounced non-equivalence of the two coordinated N-donor ligands was observed. The substitution of water by pyridine and 4-CN-pyridine is shown to include the formation of a precursor outer-sphere complex, whereas substitution by pyrazine follows a limiting dissociative mechanism.

IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(kinetics and mechanism of water substitution in low-spin Fe(II) complex of 4-octasulfophenylpyrazinoporphyrazine)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 96 OF 399 CAPLUS COPYRIGHT 2007 ACS on SIN

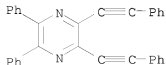
ACCESSION NUMBER: 2003:1000504 CAPLUS  
DOCUMENT NUMBER: 141:242819  
TITLE: Product class 4: organometallic complexes of copper  
AUTHOR(S): Heaney, H.; Christie, S.  
CORPORATE SOURCE: Dept. of Chemistry, University of Loughborough,  
Loughborough, LE11 3TU, UK  
SOURCE: Science of Synthesis (2004), 3, 305-662  
CODEN: SSCYJ9  
PUBLISHER: Georg Thieme Verlag  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

AB A review. The use of copper and related complexes in applications to organic synthesis is reviewed.

IT 75163-70-1P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(applications of copper and organocopper complexes to organic synthesis)

RN 75163-70-1 CAPLUS

CN Pyrazine, 2,3-diphenyl-5,6-bis(2-phenylethynyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 1706 THERE ARE 1706 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L14 ANSWER 97 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:930978 CAPLUS  
 DOCUMENT NUMBER: 140:5046  
 TITLE: Substituted imidazolymethyl pyridine and pyrazine derivatives as GABAA receptor ligands  
 INVENTOR(S): Xie, Linghong; Ghosh, Manuka; Maynard, George  
 PATENT ASSIGNEE(S): Neurogen Corporation, USA  
 SOURCE: U.S. Pat. Appl. Publ., 24 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003220348	A1	20031127	US 2003-431257	20030507
US 6982268	B2	20060103		
CA 2484936	A1	20040521	CA 2003-2484936	20030507
WO 2004041809	A2	20040521	WO 2003-US14348	20030507
WO 2004041809	A3	20040805		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003301864	A1	20040607	AU 2003-301864	20030507
EP 1501825	A2	20050202	EP 2003-808361	20030507
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006515278	T	20060525	JP 2004-549883	20030507
PRIORITY APPLN. INFO.:				
			US 2002-379117P	P 20020508
			WO 2003-US14348	W 20030507

OTHER SOURCE(S): MARPAT 140:5046

AB The patent relates to the preparation of substituted imidazolymethyl pyridine and pyrazine derivs. that bind to GABAA receptors. Such compds. may be used to modulate ligand binding to GABAA receptors in vivo or in vitro, and are particularly useful in the treatment of a variety of central nervous system (CNS) disorders in humans, domesticated companion animals and livestock animals. Compds. provided herein may be administered alone or in combination with one or more other CNS agents to potentiate the effects of the other CNS agent(s). Pharmaceutical compns. and methods for treating such disorders are provided, as are methods for using such ligands for detecting GABA A receptors (e.g., receptor localization studies).

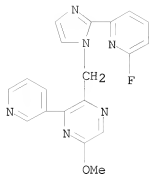
IT 627910-73-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(substituted imidazolymethyl pyridine and pyrazine derivs. as GABAA receptor ligands)

RN 627910-73-0 CAPLUS

CN Pyrazine, 2-[(2-(6-fluoro-2-pyridinyl)-1H-imidazol-1-yl)methyl]-5-methoxy-3-(3-pyridinyl)- (CA INDEX NAME)



REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 98 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:911996 CAPLUS

DOCUMENT NUMBER: 140:331239

TITLE: Dimensionality changes in crystalline complexes induced by exposure to air: Solid-state studies using single crystal and powder X-ray diffraction methods

AUTHOR(S): Neels, Antonia; Alfonso, Montserrat; Mantero, Deborah Gonzalez; Stoeckli-evans, Helen

CORPORATE SOURCE: Institut de Chimie, Universite de Neuchatel, Neuchatel, CH-2007, Switz.

SOURCE: Chimia (2003), 57(10), 619-622

CODEN: CHIMAD; ISSN: 0009-4293

PUBLISHER: Swiss Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB When they come into contact with air, coordination compds. can often change their appearance. For instance, the color of the compound can change as transparent crystals become opaque microcryst. solids. This visible transformation of the compound is frequently accompanied by structural modifications due to loss of solvent mols. or in the reverse case, the reaction with H2O from the air. Often, the dimensionality of the structures also varies and this aspect is demonstrated for three pairs of Cu(II) complexes (1-dimensional → 0-dimensional, 1-dimensional → 2-dimensional and 3-dimensional → 2D). The complementary use of single crystal and powder x-ray diffraction methods is indispensable for the evaluation of these structural changes.

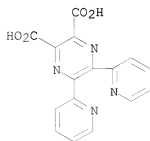
IT 374115-72-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(for preparation of copper methylbis(pyridyl)pyrazine complex)

RN 374115-72-7 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 99 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:892800 CAPLUS

DOCUMENT NUMBER: 139:395950

TITLE: Preparation of substituted pyrazines as protein kinase modulators

INVENTOR(S): Buhr, Chris A.; Baik, Tae-Gon; Ma, Sunghoon; Tesfai, Zerom; Wang, Longcheng; Co, Erick Wang; Epshteyn, Sergey; Kennedy, Abigail R.; Chen, Baili; Dubenko, Larisa; Anand, Neel Kumar; Tsang, Tsze H.; Nuss, John M.; Peto, Csaba J.; Rice, Kenneth D.; Ibrahim, Mohamed Abdulkader; Schnepf, Kevin Luke; Shi, Xian; Leahy, James William; Chen, Jeff; Dalrymple, Lisa Esther; Forsyth, Timothy Patrick; Huynh, Tai Phat; Mann, Grace; Mann, Lary Wayne; Takeuchi, Craig Stacy

PATENT ASSIGNEE(S): Exelixis, Inc., USA

SOURCE: PCT Int. Appl., 468 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

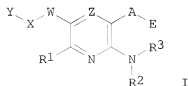
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003093297	A2	20031113	WO 2003-US13869	20030502
WO 2003093297	A3	20040701		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2484209	A1	20031113	CA 2003-2484209	20030502
AU 2003234464	A1	20031117	AU 2003-234464	20030502
EP 1501514	A2	20050202	EP 2003-728690	20030502
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
JP 2005530760	T	20051013	JP 2004-501436	20030502
US 2006211709	A1	20060921	US 2005-513081	20050727
PRIORITY APPLN. INFO.:			US 2002-377933P	P 20020503
			WO 2003-US13869	W 20030502

OTHER SOURCE(S): MARPAT 139:395950

GI





AB This invention relates to compds. I [R1 = H, halo, CN, etc.; R2, R3 = H, alkyl, aryl, etc.; R4 = H, alkyl, aryl, etc.; Z = N, CH; A = CO, CS, C(:NR6), R7 (when A = R7, E does not exist); R6 = H, NO2, CN, etc.; R7 = (un)substituted 5-7 membered heterocyclyl; E = NR8R9, NNR2R3, OR4, etc.; R8 = H, alkyl; R9 = H, heteroarylalkyl, etc.; NR8R9 = (un)substituted 5-7 membered heteroalicycyl; W = 6-10 membered arylene, 5-10 membered heteroarylene; X = a bond, (un)substituted alkylene, O(CH2)2-30, etc.; Y = H, alkyl, aryl, etc.; with provisos] for modulating protein kinase enzymic activity for modulating cellular activities such as proliferation, differentiation, programmed cell death, migration and chemoinvasion, and to pharmaceutical compns. containing such compds. Even more specifically, the invention relates to compds. I that inhibit, regulate and/or modulate kinases, particularly Checkpoint Kinases, even more particularly Checkpoint Kinase 1, or Chk1. Preparation of representative compds. I is described. Thus, amidation of 3-amino-6-phenylpyrazinecarboxylic acid (preparation given) with benzylamine afforded 67% 3-amino-6-phenyl-N-(phenylmethyl)pyrazine-2-carboxamide which showed IC50 of 10,000 nM or greater against Chk1. Table presenting activity data with respect to Chk1 for over 1000 compds. I is given. Methods of therapeutically or prophylactically using the compds. I and compns. to treat kinase-dependent diseases and conditions are also an aspect of the invention, and include methods of treating cancer, as well as other disease states associated with unwanted angiogenesis and/or cellular proliferation, by administering effective amts. of such compds.

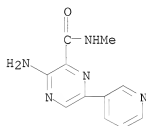
IT 625460-06-2P 625462-17-1P 625462-94-4P  
625463-43-6P 625463-44-7P 625463-54-9P  
625464-46-2P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of protein kinase modulators)

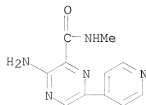
RN 625460-06-2 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-methyl-6-(3-pyridinyl)- (9CI) (CA INDEX NAME)



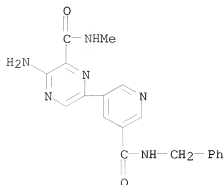
RN 625462-17-1 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-methyl-6-(4-pyridinyl)- (9CI) (CA INDEX NAME)



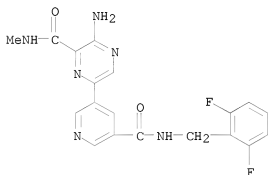
RN 625462-94-4 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-methyl-6-[5-[[ (phenylmethyl)amino]carbonyl]-3-pyridinyl]- (9CI) (CA INDEX NAME)



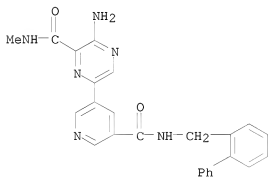
RN 625463-43-6 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-[5-[[[(2,6-difluorophenyl)methyl]amino]carbonyl]-3-pyridinyl]-N-methyl- (9CI) (CA INDEX NAME)



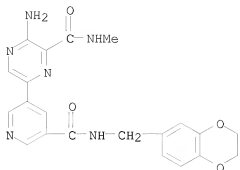
RN 625463-44-7 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-[5-[[[([1,1'-biphenyl]-2-ylmethyl)amino]carbonyl]-3-pyridinyl]-N-methyl- (9CI) (CA INDEX NAME)

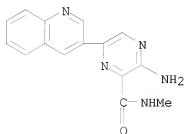


RN 625463-54-9 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-[5-[[[(2,3-dihydro-1,4-benzodioxin-6-yl)methyl]amino]carbonyl]-3-pyridinyl]-N-methyl- (9CI) (CA INDEX NAME)



RN 625464-46-2 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-N-methyl-6-(3-quinolinyl)- (9CI) (CA INDEX NAME)



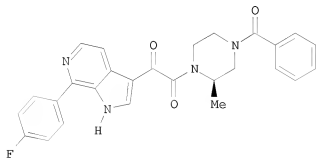
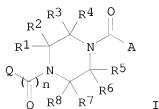
L14 ANSWER 100 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:874972 CAPLUS  
 DOCUMENT NUMBER: 139:364960  
 TITLE: Composition and antiviral activity of substituted azaindoles  
 INVENTOR(S): Wang, Tao; Zhang, Zhongxing; Meanwell, Nicholas A.; Kadow, John F.; Yin, Zhiwei; Xue, Qiufen May  
 PATENT ASSIGNEE(S): Bristol-Myers Squibb Company, USA  
 SOURCE: U.S. Pat. Appl. Publ., 277 pp., Cont.-in-part of U.S. Ser. No. 38,306.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003207910	A1	20031106	US 2002-214982	20020807
US 2003069266	A1	20030410	US 2002-38306	20020102
US 2004110785	A1	20040610	US 2003-630278	20030730
ZA 2003005885	A	20041101	ZA 2003-5885	20030730
WO 2004014380	A1	20040219	WO 2003-US24415	20030804
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,				

	FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,	
	BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG	
AU 2003261367	A1 20040225	AU 2003-261367 20030804
BR 2003013286	A 20050705	BR 2003-13286 20030804
CN 1688311	A 20051026	CN 2003-823743 20030804
JP 2006504669	T 20060209	JP 2004-527742 20030804
CA 2494832	A1 20040219	CA 2003-2494832 20030805
EP 1549313	A1 20050706	EP 2003-784906 20030805
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,	
	IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK	
US 2005090522	A1 20050428	US 2004-969675 20041020
NO 2005000514	A 20050318	NO 2005-514 20050128
MX 2005PA01441	A 20050606	MX 2005-PA1441 20050204
IN 2007DN01838	A 20070427	IN 2007-DN1838 20070308
PRIORITY APPLN. INFO.:		US 2001-266183P P 20010202
		US 2001-314406P P 20010823
		US 2002-38306 A2 20020102
		US 2002-214982 B2 20020807
		US 2003-630278 B1 20030730
		WO 2003-US24415 W 20030804
		IN 2005-DN382 A3 20050202

OTHER SOURCE(S): MARPAT 139:364960

GI



AB Title compds. I [n = 1 or 2; Q = (un)substituted azaindole heterocycle; A = alkoxy, (un)substituted aryl or heteroaryl; R1-8 are independently selected from H, alkyl or haloalkyl consisting of up to three halogen substituents with same or different halogens] having drug and bio-affecting properties, their pharmaceutical compns., method of use, and synthetic preparation are disclosed. Thus, e.g., II was prepared via palladium catalyzed coupling of 1-benzoyl-3-(R)-methyl-4-[(7-(4-fluorophenyl)-6-azaindol-3-yl)oxoacetyl]-piperazine (preparation given) with 4-fluorophenylboronic acid. II demonstrated 56% inhibition of luciferase expression at 10  $\mu$ M. These compds. possess unique antiviral activity, whether used alone or in combination with other antivirals, anti-infectives, immunomodulators or HIV entry inhibitors. More

particularly, the present invention relates to the treatment of HIV and AIDS.

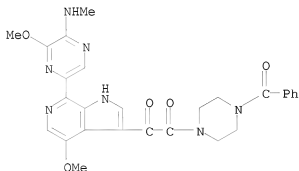
IT 446289-50-5P 446289-52-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(target compound; preparation and antiviral activity of substituted azaindoleoxoacetic piperazine derivs.)

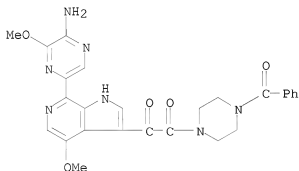
RN 446289-50-5 CAPLUS

CN Piperazine, 1-benzoyl-4-[[4-methoxy-7-[6-methoxy-5-(methylamino)pyrazinyl]-1H-pyrrolo[2,3-c]pyridin-3-yl]oxoacetyl]- (9CI) (CA INDEX NAME)



RN 446289-52-7 CAPLUS

CN Piperazine, 1-[[7-(5-amino-6-methoxypyrazinyl)-4-methoxy-1H-pyrrolo[2,3-c]pyridin-3-yl]oxoacetyl]-4-benzoyl- (9CI) (CA INDEX NAME)



L14 ANSWER 101 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN

ACCESSION NUMBER: 2003:867116 CAPLUS

DOCUMENT NUMBER: 141:38713

TITLE: Synthesis and phosphorescence of a new iridium(III) pyrazine complex

AUTHOR(S): Zhang, Gui-Lin; Liu, Ze-Hua; Guo, Hai-Qing

CORPORATE SOURCE: State Key Laboratory of Rare Earth materials Chemistry and Applications, College of Chemistry and Molecular Engineering, Peking University, Beijing, 100871, Peop. Rep. China

SOURCE: Wuli Huaxue Xuebao (2003), 19(10), 889-891

PUBLISHER: CODEN: WHXUEU; ISSN: 1000-6818

DOCUMENT TYPE: Beijing Daxue Chubanshe

LANGUAGE: Journal

Chinese

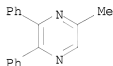
OTHER SOURCE(S): CASREACT 141:38713

AB The aim of this study is to explore new phosphorescent materials as highly efficient electroluminescent (EL) emitters in organic light emitting diodes (OLEDs). Iridium (III) complexes were selected as the target compds. for their strong spin orbit coupling that may result in high efficient electro-phosphorescence in OLED at room temperature. Thus, a new iridium pyrazine complex, Ir(MDPP)2(acac) (MDPP = 5-methyl-2,3-diphenylpyrazine; acac = acetylacetone) was synthesized by reaction of 5-methyl-2,3-diphenylpyrazine with iridium trichloride hydrate. The procedure of synthesis is simple and easy control. The complex was characterized by elemental anal., <sup>1</sup>H NMR, and mass spectroscopy. The complex shows strong 1MLCT (singlet metal to ligand charge-transfer) and 3MLCT (triplet metal to ligand charge-transfer) absorption at 386 and 507 nm, resp. The complex also gives rise to a strong photoluminescence at 549 nm at room temperature. These results suggest the complex to be a promising phosphorescent material.

IT 78605-07-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis and phosphorescence of iridium methylphenylpyrazine cyclometalated complex)

RN 78605-07-9 CAPLUS

CN Pyrazine, 5-methyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 102 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:836759 CAPLUS  
 DOCUMENT NUMBER: 139:350753  
 TITLE: Preparation of 2,3-diphenylpyrazine derivatives as inhibitors of Akt activity for treating cancer  
 Duggan, Mark E.; Lindsley, Craig W.; Zhao, Zhijian  
 INVENTOR(S): Merck & Co., Inc., USA  
 PATENT ASSIGNEE(S): PCT Int. Appl., 119 pp.  
 SOURCE: CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003086279	A2	20031023	WO 2003-US10342	20030404
WO 2003086279	A3	20040108		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2481229	A1	20031023	CA 2003-2481229	20030404

AU 2003226250	A1	20031027	AU 2003-226250	20030404
AU 2003226250	B2	20070816		
EP 1494675	A2	20050112	EP 2003-746593	20030404
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005529100	T	20050929	JP 2003-583306	20030404
US 2005182256	A1	20050818	US 2004-509959	20041004
US 2007142388	A1	20070621	US 2007-704105	20070208
PRIORITY APPLN. INFO.:			US 2002-370842P	P 20020408
			WO 2003-US10342	W 20030404
			US 2004-509959	A1 20041004

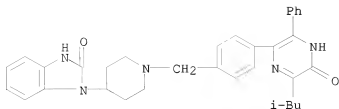
OTHER SOURCE(S): MARPAT 139:350753  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The title compds. [I; R1 = alkenyl, halo, CN, etc.; R2 = OH, CN, CO<sub>2</sub>H, etc.; R3, R4 = H, alkyl, perfluoroalkyl; or R3 and R4 are combined to form (CH<sub>2</sub>)<sub>t</sub> wherein one of the carbon atoms is optionally replaced by O, S<sub>Om</sub>, (un)substituted NHCO, N(COH); R5, R6 = H, aryl, heterocyclyl, etc.; or NR<sub>5</sub>R<sub>6</sub> = monocyclic or bicyclic heterocycle; n = 0-2; p = 0-2; t = 2-6; m = 0-2] and their salts which inhibit the activity of Akt, a serine/threonine protein kinase, were prepared. Thus alkylating 4-(2-keto-1-benzimidazol-1-yl)piperidine with 4-bromomethylbenzyl followed by reacting the resulting intermediate with leucinecarboxamide.HCl afforded the pyrazines II and III. The exemplified compds. I were found to have IC<sub>50</sub> of ≤ 20 μM against one or more of Akt1, Akt2 and Akt3. The invention is further directed to chemotherapeutic compds. containing the compds. I and methods for treating cancer comprising administration of the compds. I.

IT 612847-15-1P 612847-16-2P 612847-17-3P  
612847-18-4P 612847-19-5P 612847-20-8P  
612847-21-9P 612847-22-0P 612847-23-1P  
612847-24-2P 612847-25-3P 612847-26-4P  
612848-78-9P 616873-13-3P 616873-18-8P  
616873-19-9P 616873-20-2P 616873-21-3P  
616873-22-4P 616873-23-5P 616873-24-6P  
616873-25-7P 616873-26-8P 616873-27-9P  
616873-28-0P 616873-29-1P 616873-30-4P  
616873-31-5P  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of 2,3-diphenylpyrazine derivs. as inhibitors of Akt activity for treating cancer)

RN 612847-15-1 CAPLUS  
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



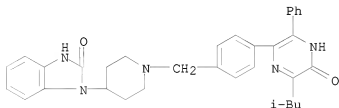
RN 612847-16-2 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-15-1

CMF C33 H35 N5 O2



CM 2

CRN 76-05-1

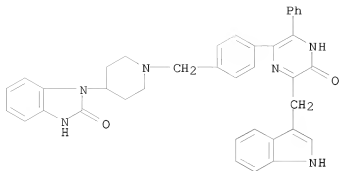
CMF C2 H F3 O2



RN 612847-17-3 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-(1H-indol-3-ylmethyl)-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)





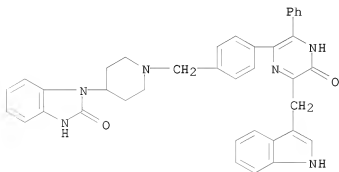
RN 612847-18-4 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-indol-3-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidynyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-17-3

CMF C38 H34 N6 O2



CM 2

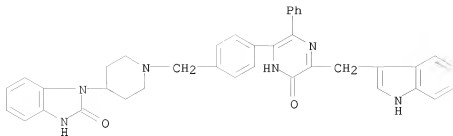
CRN 76-05-1

CMF C2 H F3 O2



RN 612847-19-5 CAPLUS

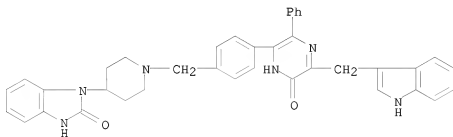
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-indol-3-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidynyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 612847-20-8 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-(1,6-dihydro-5-(1H-indol-3-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl)methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

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CRN 612847-19-5  
 CMF C38 H34 N6 O2

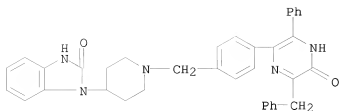


CM 2

CRN 76-05-1  
 CMF C2 H F3 O2



RN 612847-21-9 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-5-oxo-3-phenyl-6-(phenylmethyl)pyrazinyl]phenyl)methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



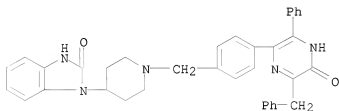
RN 612847-22-0 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-5-oxo-3-phenyl-6-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-21-9

CMF C36 H33 N5 O2



CM 2

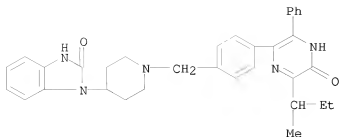
CRN 76-05-1

CMF C2 H F3 O2



RN 612847-23-1 CAPLUS

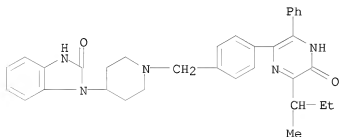
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 612847-24-2 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-(1-methylpropyl)-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-23-1  
 CMF C33 H35 N5 O2

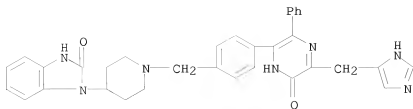


CM 2

CRN 76-05-1  
 CMF C2 H F3 O2



RN 612847-25-3 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-(1,6-dihydro-5-(1H-imidazol-4-ylmethyl)-6-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



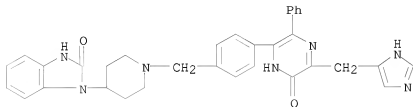
RN 612847-26-4 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-imidazol-4-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]methyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-25-3

CMF C33 H31 N7 O2



CM 2

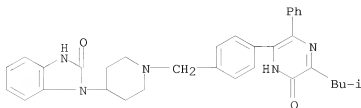
CRN 76-05-1

CMF C2 H F3 O2



RN 612848-78-9 CAPLUS

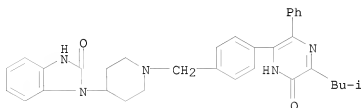
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]methyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 616873-13-3 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612848-78-9  
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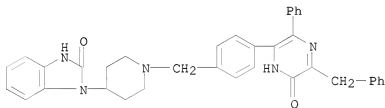


CM 2

CRN 76-05-1  
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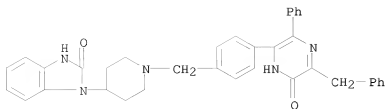
RN 616873-18-8 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-6-oxo-3-phenyl-5-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 616873-19-9 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-6-oxo-3-phenyl-5-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-18-8  
 CMF C36 H33 N5 O2



CM 2

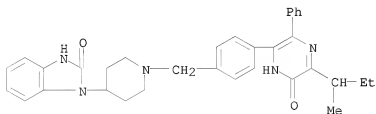
CRN 76-05-1

CMF C2 H F3 O2



RN 616873-20-2 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



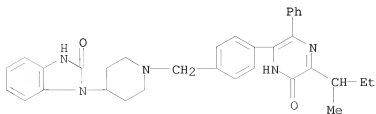
RN 616873-21-3 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-20-2

CMF C33 H35 N5 O2



CM 2

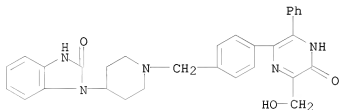
CRN 76-05-1

CMF C2 H F3 O2



RN 616873-22-4 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(hydroxymethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



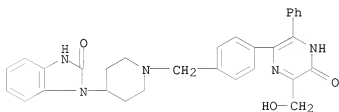
RN 616873-23-5 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(hydroxymethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 616873-22-4

CMF C30 H29 N5 O3



CM 2

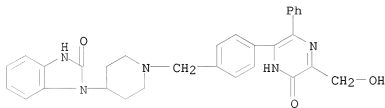
CRN 76-05-1

CMF C2 H F3 O2





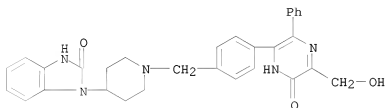
RN 616873-24-6 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(hydroxymethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 616873-25-7 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(hydroxymethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 616873-24-6  
 CMF C30 H29 N5 O3



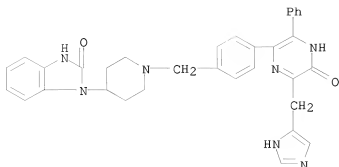
CM 2

CRN 76-05-1  
 CMF C2 H F3 O2



RN 616873-26-8 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-imidazol-4-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI)

(CA INDEX NAME)



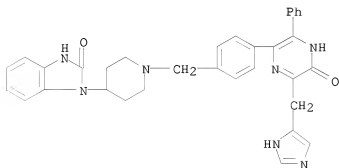
RN 616873-27-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-(1H-imidazol-4-ylmethyl)-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-26-8

CMF C33 H31 N7 O2



CM 2

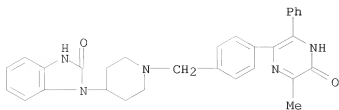
CRN 76-05-1

CMF C2 H F3 O2



RN 616873-28-0 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-methyl-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



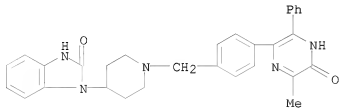
RN 616873-29-1 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-methyl-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-28-0

CMF C30 H29 N5 O2



CM 2

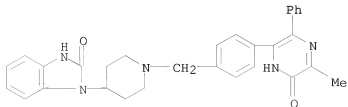
CRN 76-05-1

CMF C2 H F3 O2



RN 616873-30-4 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(1,6-dihydro-5-methyl-6-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



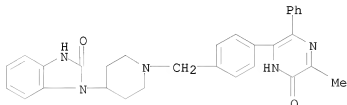
RN 616873-31-5 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(1,6-dihydro-5-methyl-6-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-30-4

CMF C30 H29 N5 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



L14 ANSWER 103 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:818232 CAPLUS

DOCUMENT NUMBER: 139:323527

TITLE: Preparation of triazolo[4,3-b]pyridazines and 2,3-diarylquinazolines for the treatment of cancer  
INVENTOR(S): Barnett, Stanley F.; Defeo-Jones, Deborah; Haskell, Kathleen M.; Huber, Hans E.; Nahas, Deborah D.; Lindsley, Craig W.; Zhao, Zhijian; Hartman, George D.

PATENT ASSIGNEE(S): Merck & Co., Inc., USA

SOURCE: PCT Int. Appl., 170 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003084473	A2	20031016	WO 2003-US10632	20030404
WO 2003084473	A3	20040212		

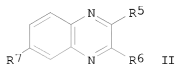
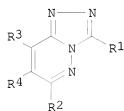
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NI, NO, NZ, OM, PA, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,

KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003226301 A1 20031020 AU 2003-226301 20030404  
 US 2006142178 A1 20060629 US 2004-510068 20041004  
 PRIORITY APPLN. INFO.: US 2002-370827P P 20020408  
 US 2002-417202P P 20021009  
 WO 2003-US10632 W 20030404

GI



AB Triazolo[4,3-b]pyridazines I [R1 = (un)substituted Ph, furyl, thienyl, pyridinyl; R2 = substituted NH2, OH; R3 = H, R4 = (un)substituted cycloalkyl, aryl; R3R4 = (un)substituted CH:CHCH:CH] and quinazolines II [R5, R6 = (un)substituted Ph; R7 = H, alkyl, halogen, OH, alkoxy] were prepared for use as inhibitors of one or two of the isoforms of Akt, a serine/threonine protein kinase, acting particularly on the pleckstrin homol. domain of Akt. Thus, 3,6-dichloropyridazine was converted to its 4-cyclobutyl derivative which was cyclized with BzNHNH2 and aminated to give I [R1 = Ph, R2 = NHCH2CMe2CH2NMe2, R3 = H, R4 = cyclobutyl]. This compound had IC50 for inhibition of Akt1 of 1.4  $\mu$ M.

IT 612847-16-2P 612847-18-4P 612847-20-8P  
 612847-22-0P 612847-24-2P 612847-26-4P  
 612848-79-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of triazolo[4,3-b]pyridazines and 2,3-diarylquinazolines for the treatment of cancer)

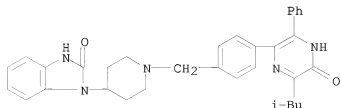
RN 612847-16-2 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

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CRN 612847-15-1

CMF C33 H35 N5 O2

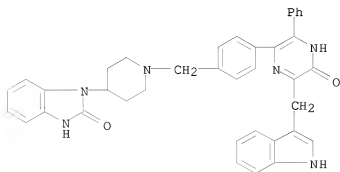


CM 2  
CRN 76-05-1  
CMF C2 H F3 O2



RN 612847-18-4 CAPLUS  
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-indol-3-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1  
CRN 612847-17-3  
CMF C38 H34 N6 O2



CM 2  
CRN 76-05-1  
CMF C2 H F3 O2



RN 612847-20-8 CAPLUS  
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-indol-3-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

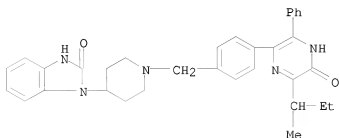
CM 1  
CRN 612847-19-5  
CMF C38 H34 N6 O2



RN 612847-24-2 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-23-1  
 CMF C33 H35 N5 O2



CM 2

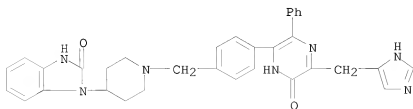
CRN 76-05-1  
 CMF C2 H F3 O2



RN 612847-26-4 CAPLUS  
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-imidazol-4-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-25-3  
 CMF C33 H31 N7 O2



CM 2

CRN 76-05-1



CMF C2 H F3 O2



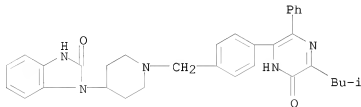
RN 612848-79-0 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 612848-78-9

CMF C33 H35 N5 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



L14 ANSWER 104 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:691939 CAPLUS

DOCUMENT NUMBER: 139:323890

TITLE: Design and synthesis of a thermally stable second-order nonlinear optical chromophore and its poled polymers

AUTHOR(S): Qin, Anjun; Yang, Zhou; Bai, Fenglian; Ye, Cheng

CORPORATE SOURCE: Organic Solids Laboratory, Center for Molecular Science, Institute of Chemistry, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (2003), 41(18), 2846-2853

CODEN: JPACEC; ISSN: 0887-624X

PUBLISHER: John Wiley & Sons, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A multiple charge-transfer second-order nonlinear optical (NLO) chromophore 2,3-bis(4-aminophenyl)-5,6-dicyanopyrazine (BAPDCP) was successfully designed and synthesized. It was characterized by <sup>1</sup>H NMR, mass spectrometry, Fourier transform IR spectroscopy, and elemental anal. The first hyperpolarizability  $\beta$  of BAPDCP was measured with the Hyper-Rayleigh scattering technique, which was  $123.5 \pm 10\text{-}30$  esu. The donor-embedded prepolyimide and prepolyurea were also synthesized by a polyaddn. reaction. Thermogravimetric anal. and differential scanning calorimetry demonstrated that either the chromophore or the polymers have fine thermal stability. The thin films of prepolymers were prepared by coating on ITO glass substrate and poled by corona poling at elevating temperature. The second-order NLO coeffs. d<sub>33</sub> of the films were measured by in situ second-harmonic generation measurements. The d<sub>33</sub> were deduced as 27.7 and 16.5 pm/V for polyurea and polyimide at 1064 nm fundamental wavelength, resp. The onset depoling temperature of the polyimide and polyurea were both as high as 200°. To understand the temperature effect to the orientation thermal stability of polyimide, two films were treated at different final poling temps. The depoling exptl. results showed that the orientation stability is higher, as raising the final treated temperature but the d<sub>33</sub> value are almost similar.

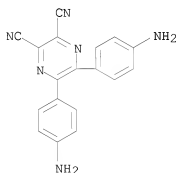
IT 614735-92-1P 614735-93-2P 614735-94-3P 614735-95-4P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (design and synthesis of a thermally stable second-order nonlinear optical chromophore and its poled polymers)

RN 614735-92-1 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-aminophenyl)-, polymer with 1,1'-[(3,4-diphenyl-2,5-thiophenediyl)di-4,1-phenylene]bis[1H-pyrrole-2,5-dione] (9CI) (CA INDEX NAME)

CM 1

CRN 566149-78-8

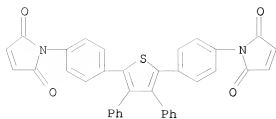
CMF C18 H12 N6



CM 2

CRN 118338-94-6

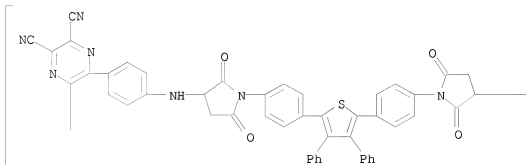
CMF C36 H22 N2 O4 S



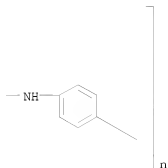
RN 614735-93-2 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenyleneimino(2,5-dioxo-3,1-pyrrolidinediyl)-1,4-phenylene(3,4-diphenyl-2,5-thiophenediyl)-1,4-phenylene(2,5-dioxo-1,3-pyrrolidinediyl)imino-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



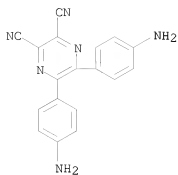
RN 614735-94-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-aminophenyl)-, polymer with 1,4-diisocyanatobenzene (9CI) (CA INDEX NAME)

CM 1

CRN 566149-78-8

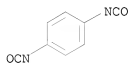
CMF C18 H12 N6



CM 2

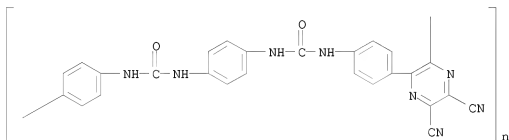
CRN 104-49-4

CMF C8 H4 N2 O2



RN 614735-95-4 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenyleneiminocarbonylimino-1,4-phenyleneiminocarbonylimino-1,4-phenylene] (9CI) (CA INDEX NAME)



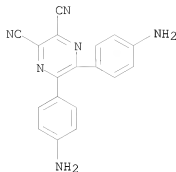
IT 566149-78-8P, 2,3-Bis(4-aminophenyl)-5,6-dicyanopyrazine  
566149-79-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(in preparation of a thermally stable second-order nonlinear optical chromophore and its poled polymers)

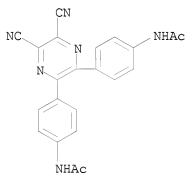
RN 566149-78-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-aminophenyl)- (CA INDEX NAME)



RN 566149-79-9 CAPLUS

CN Acetamide, N,N'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene]bis- (9CI)  
(CA INDEX NAME)



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 105 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN

ACCESSION NUMBER: 2003:686664 CAPLUS

DOCUMENT NUMBER: 140:112809

TITLE: Synthesis and characteristics of dicyanopyrazine dyes containing spiropyran group

AUTHOR(S): Lee, Bum Hoon; Jaung, Jae Yun

CORPORATE SOURCE: Department of Fiber and Polymer Engineering, Hanyang University, Seoul, 133-791, S. Korea

SOURCE: Dyes and Pigments (2003), 59(2), 135-142

CODEN: DYPIDX; ISSN: 0143-7208

PUBLISHER: Elsevier Science Ltd.

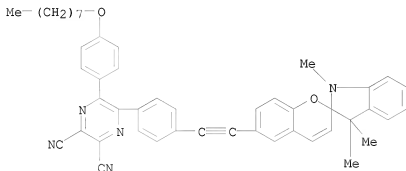
DOCUMENT TYPE: Journal

LANGUAGE: English

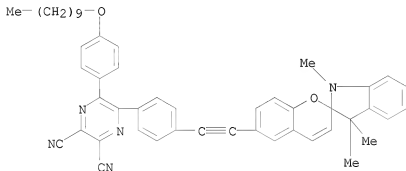
OTHER SOURCE(S): CASREACT 140:112809

AB 2,3-Dicyano-5-(4-ethynylphenyl)-6-(4-alkoxyphenyl)pyrazines (alkoxy = octyloxy or decyloxy) were synthesized by condensation of diaminomaleonitrile with the appropriate 1-(4-alkoxyphenyl)-2-(4-ethynylphenyl)ethanediones. The coupling reaction of 1,3,3-trimethyl-6'-iodospiro[2H-benzopyran-2,2'-indoline] with the above pyrazines gave 2 novel 2,3-dicyanopyrazine dyes containing a spiropyran group. The dyes had emission at 484 nm in chloroform solution as well as photochromic properties under UV irradiation. Their characteristics were evaluated by DSC and UV-visible and fluorescence spectroscopy. The combination of different functionalities such as 2,3-dicyanopyrazine and spiropyran was thus accomplished.

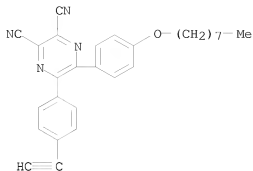
IT 484678-56-0P 484678-61-7P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (dye; preparation of fluorescent photochromic dicyanopyrazine dyes containing  
 spiropyran group)  
 RN 484678-56-0 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5-[4-[(1',3'-dihydro-1',3',3'-trimethylspiro[2H-1-benzopyran-2,2'-[2H]indol]-6-yl)ethynyl]phenyl]-6-[4-(octyloxy)phenyl]- (9CI) (CA INDEX NAME)



RN 484678-61-7 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-[4-[(1',3'-dihydro-1',3',3'-trimethylspiro[2H-1-benzopyran-2,2'-[2H]indol]-6-yl)ethynyl]phenyl]- (9CI) (CA INDEX NAME)

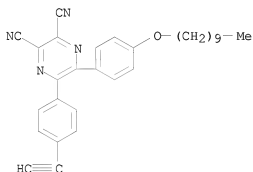


IT 484678-55-9P 484678-60-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of fluorescent photochromic dicyanopyrazine dyes containing spiropyran group)  
 RN 484678-55-9 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5-(4-ethynylphenyl)-6-[4-(octyloxy)phenyl]- (CA INDEX NAME)



RN 484678-60-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-(4-ethynylphenyl)-  
(CA INDEX NAME)



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 106 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:570968 CAPLUS

DOCUMENT NUMBER: 139:133585

TITLE: Preparation of N-pyrazinylbenzenesulfonamides and  
their use in the treatment of chemokine mediated  
diseases such as asthma

INVENTOR(S): Baxter, Andrew; Johnson, Timothy; Kindon, Nicholas;  
Roberts, Bryan; Stocks, Michael

PATENT ASSIGNEE(S): Astrazeneca AB, Swed.

SOURCE: PCT Int. Appl., 175 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003059893	A1	20030724	WO 2003-SE41	20030114
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			

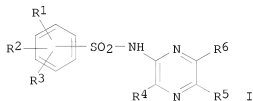
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG
CA 2472204	A1 20030724 CA 2003-2472204 20030114
AU 2003201802	A1 20030730 AU 2003-201802 20030114
EP 1467976	A1 20041020 EP 2003-700655 20030114
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
BR 2003006922	A 20041109 BR 2003-6922 20030114
CN 1639132	A 20050713 CN 2003-804481 20030114
JP 2005521650	T 20050721 JP 2003-559997 20030114
NZ 533750	A 20060331 NZ 2003-533750 20030114
IN 2004DN01835	A 20050401 IN 2004-DN1835 20040624
ZA 2004005260	A 20051003 ZA 2004-5260 20040701
MX 2004PA06806	A 20041206 MX 2004-PA6806 20040713
NO 2004003370	A 20040928 NO 2004-3370 20040813
US 2006025423	A1 20060202 US 2005-501510 20050525

PRIORITY APPLN. INFO.:

SE 2002-119	A	20020116
SE 2002-1857	A	20020617
WO 2003-SE41	W	20030114

OTHER SOURCE(S): MARPAT 139:133585

GI



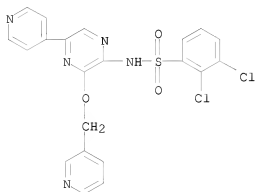
AB The invention provides N-pyrazinylbenzenesulfonamides (shown as I; variables defined below; e.g. 2,3-dichloro-N-[5-chloro-3-(2-hydroxymethylphenylmethoxy)-2-pyrazinyl]benzenesulfonamide) for use in the treatment of chemokine mediated diseases. Particularly inflammatory diseases, such as asthma. For I: R1, R2 and R3 = H, halogen, cyano, CF3, OCF3, OC1-6 alkyl or C1-6 alkyl; R4 = halogen, CO2R12, C1-6 alkoxy, C3-6 alkenyloxy, C3-6 alkynyloxy, OC1-6 alkyl-X-C1-6 alkyl, OC1-6 alkylR11, OC2-6 alkyl-X-R11, OC1-6-alkylR16. R5 and R6 = H, cyano, halogen, CO2R12, CONR14R15, C1-6-alkyl, C1-6 alkylR11, XCH(R11)C1-6 alkyl, XCH(R16)C1-6 alkyl, NR14R15, N(R11)R11, X(CH2)qNR14R15, (CH2)nNR14R15, NHC(O)C1-6 alkyl, R11, XR11, XR12, X-C1-6alkylR16, X-R16, X-(CH2)nCO2R12, X-(CH2)nCONR14R15, X-(CH2)nR11, X-(CH2)nCN, X-(CH2)qOR12, (CH2)nOR12, (CH2)n-X-R11, X-(CH2)qNHC(O)NHR12, X-(CH2)qNHC(O)R12, X-(CH2)qNHS(O)R12, X-(CH2)qNHS(O)Zr11, X-C3-6alkenyl, X-C3-6alkynyl. N = 1-5; q = 2-6; X = NR13, O, S, S(O), S(O)2; R11 = aryl group or a 5-7 membered heteroarom. ring containing 1-4 heteroatoms = N, O or S; R12 and R13 = H or C1-6 alkyl; R14 and R15 = H, C1-6 alkyl, C3-6 cycloalkyl or (CH2)qOH, or R14 and R15 together with the N atom to which they are attached form a 4-8 membered saturated ring containing 1-3 heteroatoms = N, O and S; R16 is a 4-8 membered saturated ring containing 1-3 heteroatoms = N, O or S; addnl. details including provisos are given in the claims. More than 200 example preps. are included. For example, 2,3-dichloro-N-(3-methoxy-5-methyl-2-pyrazinyl)benzenesulfonamide was prepared when NaH (0.1 g of 60%) was added to 3-methoxy-5-methyl-2-pyrazinamine (0.07 g) in 1,2-dimethoxyethane (3 mL) under N2 at room temperature; after 1 h at 50°, 2,3-dichlorobenzenesulfonyl chloride (0.15 g) was added; after stirring for 30 min, 5% aqueous citric acid was added and the product extracted with EtOAc

(X3);



the combined exts. were washed with saturated brine, dried (MgSO<sub>4</sub>) and the solvent was evaporated; chromatog. on SiO<sub>2</sub> eluting with dichloromethane/MeOH mixts. gave the title compound as a white solid (0.08 g). Compds. I have a pIC<sub>50</sub> > 5.0 towards the CCR4 receptor, e.g. 9.5 for 2,3-dichloro-N-[5-chloro-3-(2-hydroxymethylphenylmethoxy)-2-pyrazinyl]benzenesulfonamide.

IT 566205-15-0P, 2,3-Dichloro-N-[5-(4-pyridinyl)-3-(3-pyridinylmethoxy)-2-pyrazinyl]benzenesulfonamide  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (drug candidate; preparation of N-pyrazinylbenzenesulfonamides and their use in treatment of chemokine mediated diseases such as asthma)  
 RN 566205-15-0 CAPLUS  
 CN Benzenesulfonamide, 2,3-dichloro-N-[5-(4-pyridinyl)-3-(3-pyridinylmethoxy)pyrazinyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 107 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:491197 CAPLUS  
 DOCUMENT NUMBER: 139:69285  
 TITLE: Preparation of 5,6-diarylpyrazine-2-carboxamides as Cbl antagonists  
 INVENTOR(S): Berggren, Anna Ingrid Kristina; Bostrom, Stig Jonas; Elebring, Stig Thomas; Greasley, Peter; Terricabra, Emma; Wilstermann, Johan Michael  
 PATENT ASSIGNEE(S): Astrazeneca AB, Swed.; Astrazeneca UK Limited  
 SOURCE: PCT Int. Appl., 39 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003051851	A1	20030626	WO 2002-GB5742	20021218
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,				

KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ,  
 CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

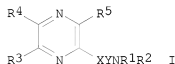
CA 2469786	A1	20030626	CA 2002-2469786	20021218
AU 2002352425	A1	20030630	AU 2002-352425	20021218
EP 1458690	A1	20040922	EP 2002-788143	20021218
EP 1458690	B1	20070221		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

BR 2002014989	A	20041214	BR 2002-14989	20021218
HU 2004002026	A2	20050228	HU 2004-2026	20021218
CN 1620438	A	20050525	CN 2002-828153	20021218
JP 2005517655	T	20050616	JP 2003-552736	20021218
NZ 533275	A	20060224	NZ 2002-533275	20021218
AT 354570	T	20070315	AT 2002-788143	20021218
ES 2280599	T3	20070916	ES 2002-2788143	20021218
IN 2004DN01555	A	20050401	IN 2004-DN1555	20040604
ZA 2004004805	A	20050815	ZA 2004-4805	20040617
MX 2004PA05990	A	20040927	MX 2004-PA5990	20040618
NO 2004003022	A	20040715	NO 2004-3022	20040715
US 2005032808	A1	20050210	US 2004-499054	20041008

PRIORITY APPLN. INFO.: SE 2001-4330 A 20011219  
 WO 2002-GB5742 W 20021218

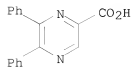
OTHER SOURCE(S): CASREACT 139:69285; MARPAT 139:69285  
 GI



AB Pyrazines I [R1, R2 = H, alkyl, aminoalkyl, cycloalkyl, cycloalkylalkyl, aryl, aralkyl, heterocyclic, heterocyclalkyl, 1-adamnatylmethyl; NR1R2 = heterocyclic; X = CO, SO2; Y = bond, (un)substituted NH; R3, R4 = (un)substituted Ph, thienyl, pyridyl; R5 = H, (un)substituted alkyl, CO2H, CONH2, CONHNH2, CN, Ac] were prepared for use in treating obesity, psychiatric and neurol. disorders and had IC50 < 1µM at the CB1 receptor. Thus, H2NCH2CH(NH2)CO2H.HCl was treated with benzil to give 5,6-diphenylpyrazine-2-carboxylic acid which was amidated with 1-aminopiperidine to give N-(1-piperidinyl)-5,6-diphenylpyrazine-2-carboxamide.

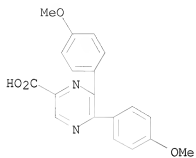
IT 13515-07-6P, 5,6-Diphenylpyrazine-2-carboxylic acid  
 122956-28-9P 548760-11-8P 548760-12-9P  
 548760-13-0P 548760-14-1P 548760-15-2P  
 548760-16-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of 5,6-diarylpyrazine-2-carboxamides as CB1 antagonists)

RN 13515-07-6 CAPLUS  
 CN 2-Pyrazinecarboxylic acid, 5,6-diphenyl- (CA INDEX NAME)



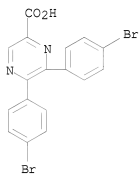
RN 122956-28-9 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



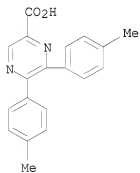
RN 548760-11-8 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



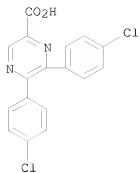
RN 548760-12-9 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)



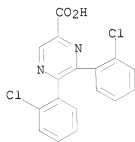
RN 548760-13-0 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



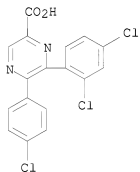
RN 548760-14-1 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(2-chlorophenyl)- (CA INDEX NAME)



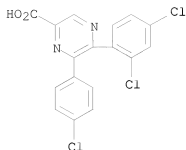
RN 548760-15-2 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-6-(2,4-dichlorophenyl)- (CA INDEX NAME)



RN 548760-16-3 CAPLUS

CN 2-Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-5-(2,4-dichlorophenyl)- (CA INDEX NAME)



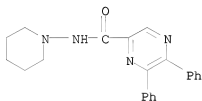
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 548759-95-1P 548759-96-2P 548759-97-3P  
 548759-98-4P 548759-99-5P 548760-00-5P  
 548760-01-6P 548760-02-7P 548760-03-8P  
 548760-04-9P 548760-05-0P 548760-06-1P  
 548760-07-2P 548760-08-3P 548760-09-4P  
 548760-10-7P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of 5,6-diarylpyrazine-2-carboxamides as CB1 antagonists)

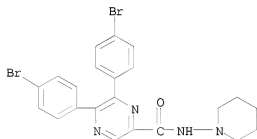
RN 548759-92-8 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-diphenyl-N-1-piperidinyl- (CA INDEX NAME)



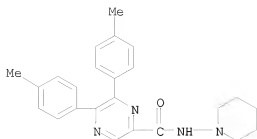
RN 548759-93-9 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-bromophenyl)-N-1-piperidinyl- (CA INDEX NAME)

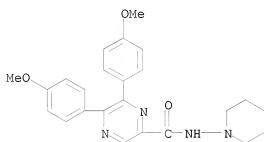


RN 548759-94-0 CAPLUS

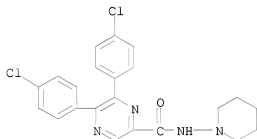
CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-1-piperidinyl- (CA INDEX NAME)



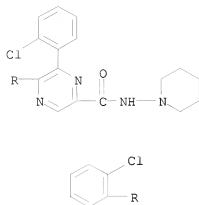
RN 548759-95-1 CAPLUS  
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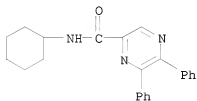
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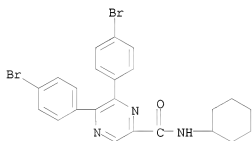
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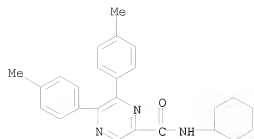
RN 548759-98-4 CAPLUS  
 CN Pyrazinecarboxamide, N-cyclohexyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



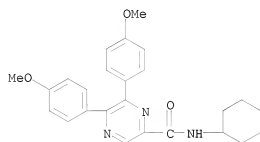
RN 548759-99-5 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(4-bromophenyl)-N-cyclohexyl- (CA INDEX NAME)



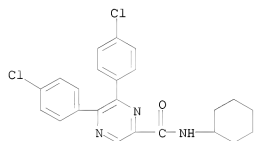
RN 548760-00-5 CAPLUS  
 CN 2-Pyrazinecarboxamide, N-cyclohexyl-5,6-bis(4-methylphenyl)- (CA INDEX NAME)



RN 548760-01-6 CAPLUS  
 CN 2-Pyrazinecarboxamide, N-cyclohexyl-5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)

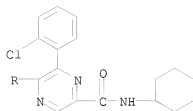


RN 548760-02-7 CAPLUS  
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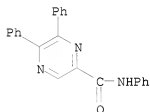
RN 548760-03-8 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(2-chlorophenyl)-N-cyclohexyl- (CA INDEX NAME)





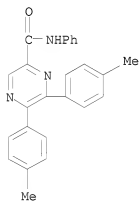
RN 548760-04-9 CAPLUS

CN 2-Pyrazinecarboxamide, N,5,6-triphenyl- (CA INDEX NAME)



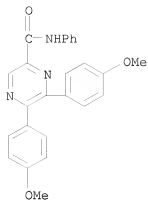
RN 548760-05-0 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-phenyl- (CA INDEX NAME)



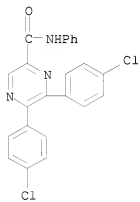
RN 548760-06-1 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-methoxyphenyl)-N-phenyl- (CA INDEX NAME)



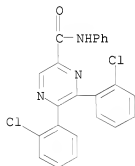
RN 548760-07-2 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-phenyl- (CA INDEX NAME)



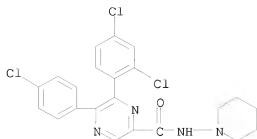
RN 548760-08-3 CAPLUS

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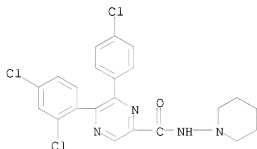


RN 548760-09-4 CAPLUS

CN 2-Pyrazinecarboxamide, 5-(4-chlorophenyl)-6-(2,4-dichlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



RN 548760-10-7 CAPLUS  
 CN 2-Pyrazinecarboxamide, 6-(4-chlorophenyl)-5-(2,4-dichlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 108 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:491196 CAPLUS  
 DOCUMENT NUMBER: 139:69284  
 TITLE: Preparation of diarylpyrazinecarboxamides as CB1 receptor antagonists  
 INVENTOR(S): Wilsterman, Johan Michael; Berggren, Anna Ingrid Kristina  
 PATENT ASSIGNEE(S): AstraZeneca AB, Swed.; AstraZeneca UK Limited  
 SOURCE: PCT Int. Appl., 27 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003051850	A1	20030626	WO 2002-GB5736	20021218
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
R:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2002352420	A1	20030630	AU 2002-352420	20021218

PRIORITY APPLN. INFO.:

SE 2001-4332

A 20011219

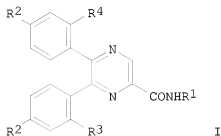
WO 2002-GB5736

W 20021218

OTHER SOURCE(S):

CASREACT 139:69284; MARPAT 139:69284

GI



AB Pyrazines I [R1 = cyclohexyl, piperidino, Ph; R2 = H, Cl, Br, Me, OMe; R3 = H, R4 = H, Cl; R3 = Cl, R4 = H, Cl] were prepared for use in the treatment of psychiatric and neurol. disorders and obesity with IC50 at the CB1 receptor < 1μM. Thus, H2NCH2CH(NH2)CO2H.HCl was treated with benzil to give 5,6-diphenylpyrazine-2-carboxylic acid which was amidated to give I [R1 = piperidino, R2-R4 = H].

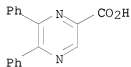
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548760-12-9P 548760-13-0P 548760-14-1P  
548760-15-2P 548760-16-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of diarylpyrazinecarboxamides as CB1 receptor antagonists)

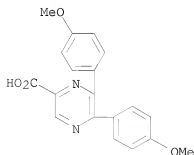
RN 13515-07-6 CAPLUS

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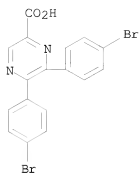
RN 122956-28-9 CAPLUS

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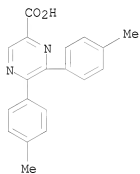
RN 548760-11-8 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



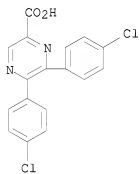
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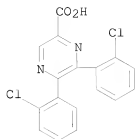
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CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)

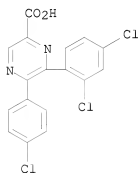


RN 548760-14-1 CAPLUS

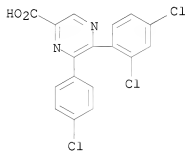
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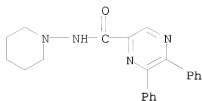
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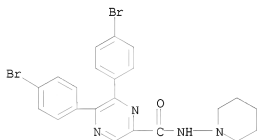
RN 548760-16-3 CAPLUS  
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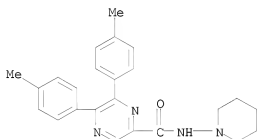
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 548759-98-4P 548759-99-5P 548760-00-5P  
 548760-01-6P 548760-02-7P 548760-03-8P  
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 548760-07-2P 548760-08-3P 548760-09-4P  
 548760-10-7P  
 RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of diarylpyrazinecarboxamides as CB1 receptor antagonists)  
 RN 548759-92-8 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-diphenyl-N-1-piperidinyl- (CA INDEX NAME)



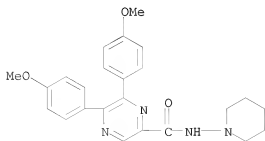
RN 548759-93-9 CAPLUS  
 CN 2-Pyrazinecarboxamide, 5,6-bis(4-bromophenyl)-N-1-piperidinyl- (CA INDEX NAME)



RN 548759-94-0 CAPLUS  
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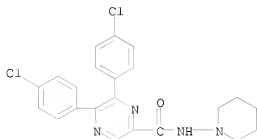


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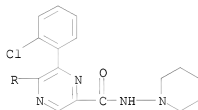
RN 548759-96-2 CAPLUS

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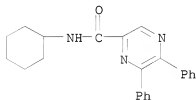
RN 548759-97-3 CAPLUS

CN 2-Pyrazinecarboxamide, 5,6-bis(2-chlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



RN 548759-98-4 CAPLUS

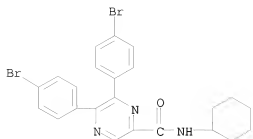
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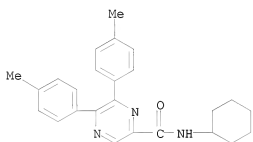
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CN 2-Pyrazinecarboxamide, 5,6-bis(4-bromophenyl)-N-cyclohexyl- (CA INDEX NAME)

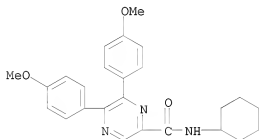




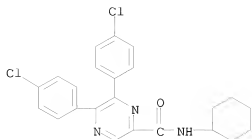
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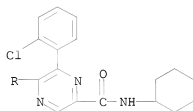
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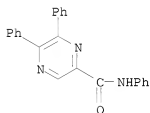
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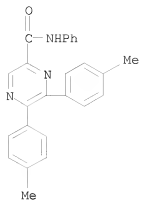
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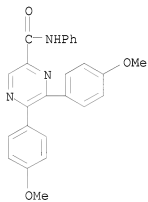
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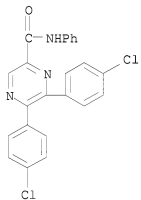
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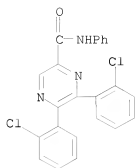
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RN 548760-07-2 CAPLUS  
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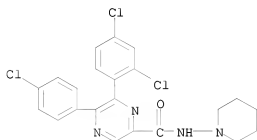


RN 548760-08-3 CAPLUS  
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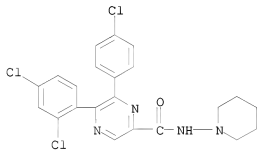
RN 548760-09-4 CAPLUS

CN 2-Pyrazinecarboxamide, 5-(4-chlorophenyl)-6-(2,4-dichlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



RN 548760-10-7 CAPLUS

CN 2-Pyrazinecarboxamide, 6-(4-chlorophenyl)-5-(2,4-dichlorophenyl)-N-1-piperidinyl- (CA INDEX NAME)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 109 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:472265 CAPLUS

DOCUMENT NUMBER: 139:261248

TITLE: Phenylene-2,5-dimethylpyrazine co-oligomers: synthesis by Suzuki couplings, x-ray structures of neutral and diprotonated teraryl species and efficient blue emission

AUTHOR(S): Tuerksoy, Figen; Hughes, Gregory; Batsanov, Andrei S.; Bryce, Martin R.

CORPORATE SOURCE: Department of Chemistry, University of Durham, Durham,

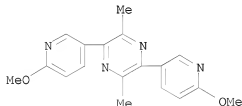
SOURCE: DH1 3LE, UK  
Journal of Materials Chemistry (2003), 13(7),  
1554-1557  
CODEN: JMACEP; ISSN: 0959-9428  
PUBLISHER: Royal Society of Chemistry  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 139:261248

AB Phenylene-2,5-dimethylpyrazinyl co-oligomers and a dipyrindylpyrazine derivative have been synthesized by Suzuki cross-coupling reactions starting from 2,5-dibromo-3,6-dimethylpyrazine. X-Ray crystal structures are reported for two teraryl derivs., viz. 2,5-bis(2-methoxyphenyl)-3,6-dimethylpyrazine (I) and 2,5-bis(6-methoxypyridin-3-yl)-3,6-dimethylpyrazine (II), and a diprotonated pyrazinyl dication salt, viz. 2,5-bis(2-methoxyphenyl)-3,6-dimethylpyrazinium bis(tetrafluoroborate) salt (III). Compds. I and II and the dication in III have crystallog. C<sub>i</sub> symmetry and adopt twisted conformations: dihedral angles between the aryl and pyrazine rings are 74.0° I, 56.4° III and 44.6° II. Violet-blue photoluminescence is seen for 2 λ<sub>max</sub> 372 nm, (IV) λ<sub>max</sub> 418 nm and 6 λ<sub>max</sub> 387 nm in ethanol solution IV is 1,4-dimethoxy-2,5-bis[2-(5-tert-butylphenyl)-3,6-dimethylpyrazinyl]benzene). Blue electroluminescence, λ<sub>max</sub> 444 nm, is observed for the device structure ITO/PEDOT/IV/Ca with no long-wavelength emission from π-aggregates or exciton states.

IT 601491-21-8P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation, blue emission, and x-ray crystal structure of)

RN 601491-21-8 CAPLUS

CN Pyrazine, 2,5-bis(6-methoxy-3-pyridinyl)-3,6-dimethyl- (CA INDEX NAME)



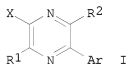
REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 110 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN  
ACCESSION NUMBER: 2003:434540 CAPLUS  
DOCUMENT NUMBER: 139:6891  
TITLE: Preparation of substituted aryl pyrazine derivatives as CRF1 receptor antagonists useful against anxiety disorders, depression and stress related disorders  
INVENTOR(S): Verhoest, Patrick R.; Hoffman, Robert L.; Corbett, Jeffrey W.; Ennis, Michael D.; Frank, Kristine E.; Fu, Jian-Min  
PATENT ASSIGNEE(S): Pharmacia & Upjohn Company, USA  
SOURCE: PCT Int. Appl., 271 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2003045924	A1	20030605	WO 2002-US33642	20021115
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US 2003144297	A1	20030731	US 2002-298193	20021115
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US 2005049257	A1	20050303	US 2004-844004	20040512
US 7041672	B2	20060509		
MX 2004PA04714	A	20040819	MX 2004-PA4714	20040518
PRIORITY APPLN. INFO.:			US 2001-332052P	P 20011121
			US 2002-358546P	P 20020221
			US 2002-388285P	P 20020613
			US 2002-410378P	P 20020913
			US 2002-298193	A1 20021115
			WO 2002-US33642	W 20021115

OTHER SOURCE(S): MARPAT 139:6891  
GI



AB Substituted aryl 1,4-pyrazine derivs. (shown as I; variables defined below; e.g. 5-(2,4-dichlorophenyl)-N-((1R,2S)-2-ethoxy-2,3-dihydro-1H-inden-1-yl)-3,6-diethylpyrazin-2-amine) and their use in treating anxiety disorders, depression and stress related disorders are disclosed. The binding affinity of I for the corticotropin releasing factor type I receptor expressed as IC<sub>50</sub> values generally ranges from .apprx.0.5 nM to .apprx.10 µM; no specific values are given. Although the methods of preparation are not claimed, 131 example preps. of I and 190 example preps. of intermediates are included. For I: X = -NR<sub>3</sub>R<sub>4</sub>, -OR<sub>3</sub>, -CR<sub>3</sub>R<sub>5</sub>R<sub>6</sub>, -C(O)R<sub>3</sub>, -S(O)mR<sub>3</sub>, -NR<sub>3</sub>C(O)R<sub>4</sub>, or -NR<sub>3</sub>S(O)mR<sub>4</sub>, m = 0-2; Ar = aryl, substituted aryl, heteroaryl, or substituted heteroaryl; R<sub>1</sub>, R<sub>2</sub>, and R<sub>5</sub> = halogen, -NO<sub>2</sub>, -CN, -R<sub>a</sub>, -OR<sub>a</sub>, -S(O)mR<sub>a</sub>, -NR<sub>a</sub>R<sub>a</sub>, -C(O)NR<sub>a</sub>R<sub>a</sub>, -C(S)NR<sub>a</sub>R<sub>a</sub>, -S(O)mNR<sub>a</sub>R<sub>a</sub>, -NR<sub>a</sub>S(O)mR<sub>a</sub>, -NR<sub>a</sub>C(O)OR<sub>a</sub>, -OC(O)NR<sub>a</sub>R<sub>a</sub>, -NR<sub>a</sub>C(O)NR<sub>a</sub>R<sub>a</sub>, -NR<sub>a</sub>C(S)NR<sub>a</sub>R<sub>a</sub>, -C(O)OR<sub>a</sub>, -C(S)OR<sub>a</sub>, or -OC(O)OR<sub>a</sub>. R<sub>3</sub> and R<sub>4</sub> = Ra or substituted and/or unsubstituted heterocycloalkyl, heteroaryl, aryl, aryl cycloalkyl, heteroaryl cycloalkyl, aryl heterocycloalkyl, or heteroaryl heterocycloalkyl; Ra = H, alkyl, cycloalkyl, haloalkyl, aryl, heteroaryl, or heterocycloalkyl (un)substituted with 1 to 5 of R<sub>t</sub>, -OR<sub>t</sub>, -S(O)mR<sub>t</sub>, NRT<sub>t</sub>, oxo, thione (:S), Ph, heteroaryl, or heterocycloalkyl; R<sub>t</sub> = H, halogen, -NO<sub>2</sub>, -NH<sub>2</sub>, -OH, -SH, -CN, -C(O)NH<sub>2</sub>, -C(O)NHalkyl, -C(O)Nalkylalkyl, -Oalkyl, NHalkyl, Nalkylalkyl, -S(O)malkyl, SO<sub>2</sub>NH<sub>2</sub>, SO<sub>2</sub>NHalkyl and SO<sub>2</sub>Nalkylalkyl, alkyl, cycloalkyl, haloalkyl, Ph, benzyl,

heteroaryl, or heterocycloalkyl; addnl. details including specifically excluded compds. are given in the claims. Compds. I are also claimed effective for screening ligands for CRF1 receptors and for detecting CRF1 receptors in tissues.

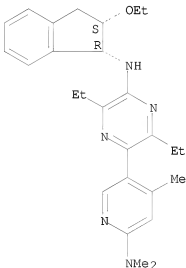
IT 535934-71-5P, 5-[6-(Dimethylamino)-4-methylpyridin-3-yl]-N-((1R,2S)-2-ethoxy-2,3-dihydro-1H-inden-1-yl)-3,6-diethylpyrazin-2-amine  
 535937-94-1P, 6-Cyclopropyl-5-[6-(dimethylamino)-4-methylpyridin-3-yl]-N-((1R,2S)-2-ethoxy-2,3-dihydro-1H-inden-1-yl)-3-ethylpyrazin-2-amine  
 535939-99-2P, 5-(3,5-Dichloropyridin-2-yl)-3,6-diethyl-N-[(1R,2S)-2-(2-fluoroethoxy)-2,3-dihydro-1H-inden-1-yl]pyrazin-2-amine  
 535940-00-2P, 5-(3-Chloro-5-methoxypyridin-2-yl)-3,6-diethyl-N-[(1R,2S)-2-(2-fluoroethoxy)-2,3-dihydro-1H-inden-1-yl]pyrazin-2-amine  
 535940-03-5P, (1R,2S)-1-[[5-(3,5-Dichloropyridin-2-yl)-3,6-diethylpyrazin-2-yl]amino]-2,3-dihydro-1H-inden-2-yl acetate  
 535940-05-7P, (1R,2S)-1-[[5-(3-Chloro-5-methoxypyridin-2-yl)-3,6-diethylpyrazin-2-yl]amino]-2,3-dihydro-1H-inden-2-yl acetate  
 RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)

(drug candidate and receptor detection and ligand screening agent; preparation of substituted aryl pyrazine derivs. as CRF1 receptor antagonists useful against anxiety disorders, depression and stress related disorders)

RN 535934-71-5 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-N-[(1R,2S)-2-ethoxy-2,3-dihydro-1H-inden-1-yl]-3,6-diethyl- (9CI) (CA INDEX NAME)

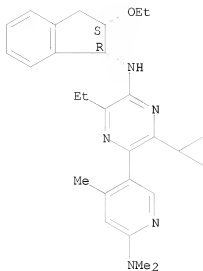
Absolute stereochemistry. Rotation (-).



RN 535937-94-1 CAPLUS

CN Pyrazinamine, 6-cyclopropyl-5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-N-[(1R,2S)-2-ethoxy-2,3-dihydro-1H-inden-1-yl]-3-ethyl- (9CI) (CA INDEX NAME)

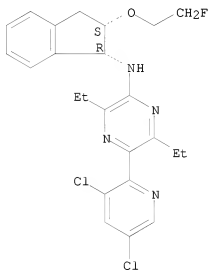
Absolute stereochemistry.



RN 535939-99-2 CAPLUS

CN Pyrazinamine, 5-(3,5-dichloro-2-pyridinyl)-3,6-diethyl-N-[(1R,2S)-2-(2-fluoroethoxy)-2,3-dihydro-1H-inden-1-yl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

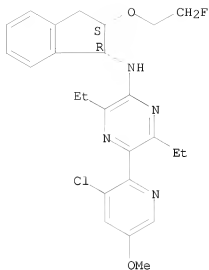


RN 535940-00-2 CAPLUS

CN Pyrazinamine, 5-(3-chloro-5-methoxy-2-pyridinyl)-3,6-diethyl-N-[(1R,2S)-2-(2-fluoroethoxy)-2,3-dihydro-1H-inden-1-yl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

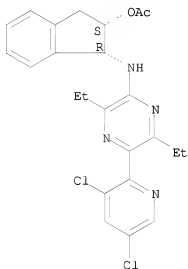




RN 535940-03-5 CAPLUS

CN 1H-inden-2-ol, 1-[[5-(3,5-dichloro-2-pyridinyl)-3,6-diethylpyrazinyl]amino]-2,3-dihydro-, acetate (ester), (1R,2S)- (9CI) (CA INDEX NAME)

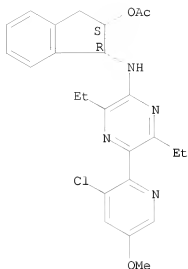
Absolute stereochemistry.



RN 535940-05-7 CAPLUS

CN 1H-inden-2-ol, 1-[[5-(3-chloro-5-methoxy-2-pyridinyl)-3,6-diethylpyrazinyl]amino]-2,3-dihydro-, acetate (ester), (1R,2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



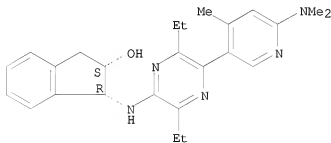
IT 535934-69-1P, (1R,2S)-1-[[5-[6-(Dimethylamino)-4-methylpyridin-3-yl]-3,6-diethylpyrazin-2-yl]amino]-2,3-dihydro-1H-inden-2-ol  
 535937-65-6P, (1R,2S)-1-[[6-Cyclopropyl-5-[6-(dimethylamino)-4-methylpyridin-3-yl]-3-ethylpyrazin-2-yl]amino]-2,3-dihydro-1H-inden-2-ol  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of substituted aryl pyrazine derivs. as CRF1 receptor antagonists useful against anxiety disorders, depression and stress related disorders)

RN 535934-69-1 CAPLUS

CN 1H-Inden-2-ol, 1-[[5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-3,6-diethylpyrazinyl]amino]-2,3-dihydro-, (1R,2S)- (9CI) (CA INDEX NAME)

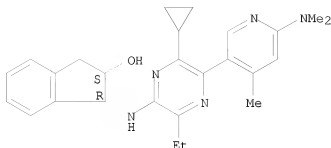
Absolute stereochemistry.



RN 535937-65-6 CAPLUS

CN 1H-Inden-2-ol, 1-[[6-cyclopropyl-5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-3-ethylpyrazinyl]amino]-2,3-dihydro-, (1R,2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 111 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:417253 CAPLUS

DOCUMENT NUMBER: 139:140477

TITLE: A thermally stable chromophore with multi-intramolecular charge-transfer and its poled polymer

AUTHOR(S): Qin, Anjun; Hu, Kang; Li, Shaojun; Cheng, Ye  
CORPORATE SOURCE: Center for Molecular Science, Organic Solids Laboratory, Institute of Chemistry, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China  
SOURCE: Synthetic Metals (2003), 137(1-3), 1517-1518  
CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new 2nd-order nonlinear optical (NLO) multi-intramol. charge-transfer chromophore 2,3-bis(4-aminophenyl)-5,6-dicyanopyrazine (DAPDCP) was designed and synthesized successfully. The maximum absorption wavelength  $\lambda_{\text{max}}$  of UV/visible spectrum in 1,4-dioxane is 423 nm and the m.p. is  $>300^\circ$ . The doped film of it in PMMA was prepared and poled by corona poling with increasing temperature step by step ( $5^\circ/\text{min}$ ). The 2nd-order nonlinear optical coefficient  $d_{33}$  is 27.2 pm/V by the in-situ SHG measurements. The depoling expts. showed that the on-set temperature of the decay of orientation order is  $105^\circ$ , which is higher than that of the typical NLO chromophore N-(4-nitro phenyl)(s)-prolinol (NPP) doped in PMMA. It demonstrated again that the harmony of thermal stable-nonlinearly-transparent trade-off can be established by using the designed X-type chromophore with multi-intramol. charge-transfer.

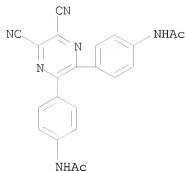
IT 566149-79-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

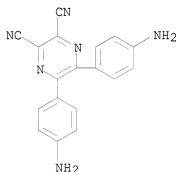
(2,3-bis(4-aminophenyl)-5,6-dicyanopyrazine synthesis using)

RN 566149-79-9 CAPLUS

CN Acetamide, N,N'-[ (5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene]bis- (9CI)  
(CA INDEX NAME)



IT 566149-78-8P, 2,3-Bis(4-aminophenyl)-5,6-dicyanopyrazine  
 RL: MOA (Modifier or additive use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (thermally stable chromophore with multi-intramol. charge-transfer and its behavior in poled PMMA)  
 RN 566149-78-8 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-aminophenyl)- (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 112 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN  
 ACCESSION NUMBER: 2003:307666 CAPLUS  
 DOCUMENT NUMBER: 139:62059  
 TITLE: Iron-Promoted Nucleophilic Additions to Diimine-Type Ligands: A Synthetic and Structural Study  
 AUTHOR(S): Vallina, Ana Tesouro; Stoeckli-Evans, Helen; Neels, Antonia; Enslin, Juergen; Decurtins, Silvio  
 CORPORATE SOURCE: Departement fuer Chemie und Biochemie, Universitaet Bern, Bern, CH-3012, Switz.  
 SOURCE: Inorganic Chemistry (2003), 42(10), 3374-3382  
 CODEN: INOCAJ; ISSN: 0020-1669  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 139:62059

AB The authors report here three examples of the reactivity of protic nucleophiles with diimine-type ligands in the presence of FeII salts. In the 1st case, the Fe-promoted alcoholysis reaction of one nitrile group of the ligand 2,3-dicyano-5,6-bis(2-pyridyl)-pyrazine (L1) permitted the isolation of an stable E-imido-ester, [Fe(L1')2](CF3SO3)2 (1), which was characterized by spectroscopic studies (IR, ES-MS, Mossbauer), elemental

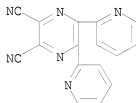
anal., and crystallog. Compound 1 consists of mononuclear octahedrally coordinated FeII complexes where the FeII ion is in its low-spin state. The Fe-mediated nucleophilic attack of H2O to the asym. ligand 2,3-bis(2-pyridyl)pyrido[3,4-b]pyrazine (L2) also was studied. In this context, the crystal structures of two hydration-oxidation FeIII products, [Fe(L2')2](ClO4)3·3MeCN (2) and trans-[FeL2''Cl2] (3), are described. Comps. 2 and 3 are both mononuclear FeIII complexes where the metals occupy octahedral positions. In principle, L2 is expected to coordinate to metal ions through its bipyridine-type units to form a five-membered ring; however, this is not the case in comps. 2 and 3. In 2, the ligand coordinates through its pyridines and through the hydroxyl group attached to the pyrazine imino C after hydration, i.e., in an N,O,N tridentate manner. In compound 3, the ligand has suffered further transformations leading to a very stable diamido complex. In this case, the metal ion achieves its octahedral geometry by two pyridines, two amido N atoms, and two axial Cl atoms. Magnetic susceptibility measurements confirmed the spin state of these two FeIII species: comps. 2 and 3 are low-spin and high-spin, resp.

IT 118553-90-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(iron-promoted nucleophilic addns. to diimine-type ligands)

RN 118553-90-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



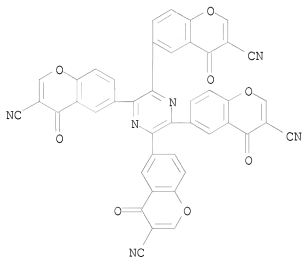
REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 113 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2003:279802 CAPLUS  
DOCUMENT NUMBER: 138:278143  
TITLE: Organic electroluminescent devices  
INVENTOR(S): Suzuki, Koichi  
PATENT ASSIGNEE(S): Canon Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

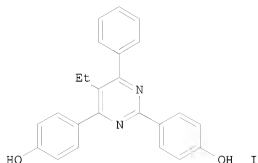
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003109763	A	20030411	JP 2001-300546	20010928
PRIORITY APPLN. INFO.:			JP 2001-300546	20010928
OTHER SOURCE(S):	MARPAT 138:278143			

AB The devices comprise a phosphor layer comprising R1-4Ar1, where R1-4 = H, alkyl, (substituted) aralkyl, (substituted) aryl, (substituted) heterocyclic, (substituted) condensed polyarom. ring, (substituted) polyheterocyclic ring; Ar1 = divalency-tetravalency naphthylene, fluorenylene, anthracenylen, phenantrenylene, vinylene, triphenylene, thiophenylen, pyridylene, pyradylene, pyrimidylene, pyradylene, pyrimidylene, pyradadylene.

IT 503472-75-1  
 RL: DEV (Device component use); USES (Uses)  
 (structure and property of organic electroluminescent devices)  
 RN 503472-75-1 CAPLUS  
 CN 4H-1-Benzopyran-3-carbonitrile, 6,6',6'',6'''-(2,3,5,6-  
 pyrazinetetrayl)tetrakis[4-oxo- (CA INDEX NAME)



L14 ANSWER 114 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:52760 CAPLUS  
 DOCUMENT NUMBER: 139:323485  
 TITLE: Estrogenic diazenes: heterocyclic non-steroidal  
 estrogens of unusual structure with selectivity for  
 estrogen receptor subtypes  
 AUTHOR(S): Ghosh, Usha; Ganessunker, Deshanie; Sattigeri,  
 Viswajanani J.; Carlson, Kathryn E.; Mortensen,  
 Deborah J.; Katzenellenbogen, Benita S.;  
 Katzenellenbogen, John A.  
 CORPORATE SOURCE: Department of Chemistry, University of Illinois,  
 Urbana, IL, 61801, USA  
 SOURCE: Bioorganic & Medicinal Chemistry (2003), 11(4),  
 629-657  
 CODEN: BMECEP; ISSN: 0968-0896  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 139:323485  
 GI



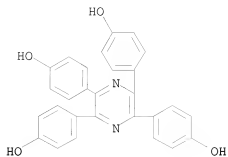
AB Estrogens regulate many biol. functions, often acting in a tissue-selective manner. Their tissue-selective action is believed to involve differential estrogen action through the two estrogen receptor (ER) subtypes, ER $\alpha$  and ER $\beta$ , as well as differential interaction of the ligand-receptor complexes with promoters and coregulator proteins. In the latter case, selectivity is based on the induction of specific conformations of the ligand-ER complex, conformations that are influenced by the structure of the ligand. Estrogen pharmaceuticals having an ideal balance of tissue-selective activity are being sought for menopausal hormone replacement, breast cancer prevention and therapy, and other actions. To expand on the structural diversity of ER ligands that might show such tissue selectivity, we have prepared a series of diazenes (pyrazines, pyrimidines, and pyridazines), e.g. I, substituted with two to four aryl groups and various short-chain aliphatic substituents. All of the pyrazine and pyrimidines bind to ER, some with high affinity and with a considerable degree of preferential binding to either ER $\alpha$  or ER $\beta$ . One pyrimidine and one pyrazine have ER $\alpha$  affinity preferences as high as 23 and 9, resp., and one pyrimidine has an ER $\beta$  affinity preference of 8. The pyridazines, by contrast, are quite polar and have only very low binding affinity for the ER. In cell-based transcription assays, several of the pyrimidines and a pyrazine were found to be considerably more agonistic on ER $\alpha$  than on ER $\beta$ . Because these triaryl diazenes have the largest vols. among the ER ligands so far investigated, their high affinity demonstrates the flexibility of the ligand binding pocket of the ERs and its tolerance for large substituents. Thus, these novel heterocyclic ligands expand the repertoire of chemical structures that bind to the estrogen receptor, and they could prove to be useful in elucidating the biol. behavior of the two ER subtypes and in forming the basis for new estrogen pharmaceuticals having desirable tissue selectivity.

IT 165378-50-7P 612824-67-6P 612824-82-5P  
612824-83-6P 612824-84-7P

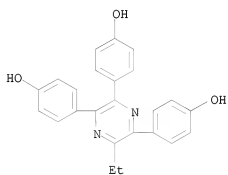
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
(heterocyclic non-steroidal estrogenic diazenes of unusual structure with selectivity for estrogen receptor subtypes)

RN 165378-50-7 CAPLUS

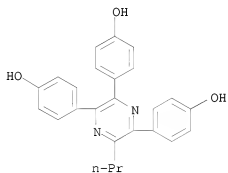
CN Phenol, 4, 4', 4'', 4'''-(2,3,5,6-pyrazinetetrayl)tetrakis- (CA INDEX NAME)



RN 612824-67-6 CAPLUS  
 CN Phenol, 4,4',4''-(6-ethyl-2,3,5-pyrazinetriyl)tris- (9CI) (CA INDEX NAME)

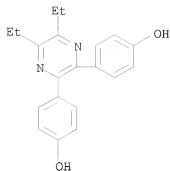


RN 612824-82-5 CAPLUS  
 CN Phenol, 4,4',4''-(6-propyl-2,3,5-pyrazinetriyl)tris- (9CI) (CA INDEX NAME)



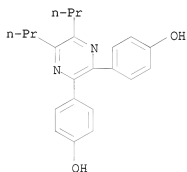
RN 612824-83-6 CAPLUS  
 CN Phenol, 4,4'-(5,6-diethyl-2,3-pyrazinediyl)bis- (CA INDEX NAME)





RN 612824-84-7 CAPLUS

CN Phenol, 4,4'-(5,6-dipropyl-2,3-pyrazinediyl)bis- (CA INDEX NAME)



IT 21885-49-4P 199783-14-7P 612824-66-5P

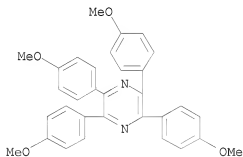
612824-80-3P 612824-81-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(heterocyclic non-steroidal estrogenic diazenes of unusual structure with selectivity for estrogen receptor subtypes)

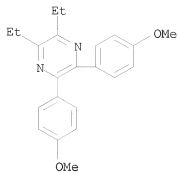
RN 21885-49-4 CAPLUS

CN Pyrazine, tetrakis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



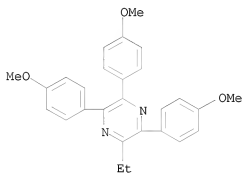
RN 199783-14-7 CAPLUS

CN Pyrazine, 2,3-diethyl-5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



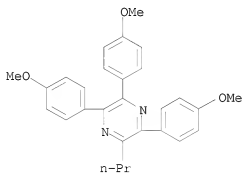
RN 612824-66-5 CAPLUS

CN Pyrazine, ethyltris(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



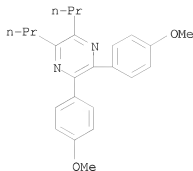
RN 612824-80-3 CAPLUS

CN Pyrazine, tris(4-methoxyphenyl)propyl- (9CI) (CA INDEX NAME)



RN 612824-81-4 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-dipropyl- (CA INDEX NAME)



REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 115 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN

ACCESSION NUMBER: 2002:849591 CAPLUS

DOCUMENT NUMBER: 137:370112

TITLE: Preparation of derivatives of heterocyclic compounds such as pyridine, pyrimidine, 1,2,4-triazine, and pyrazine as antagonists of prostaglandin I2 receptor

Asaki, Tetsuo; Hamamoto, Taisuke; Kuwano, Keiichi

INVENTOR(S): Nippon Shinyaku Co., Ltd., Japan

PATENT ASSIGNEE(S): PCI Int. Appl., 126 pp.

SOURCE: CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

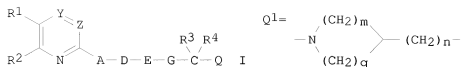
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002088084	A1	20021107	WO 2002-JP4118	20020425
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2445344	A1	20021107	CA 2002-2445344	20020425
AU 2002253588	A1	20021111	AU 2002-253588	20020425
EP 1400518	A1	20040324	EP 2002-722772	20020425
EP 1400518	B1	20070117		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2002009249	A	20040608	BR 2002-9249	20020425
CN 1516690	A	20040728	CN 2002-808977	20020425
RU 2283835	C2	20060920	RU 2003-134190	20020425
ES 2276931	T3	20070701	ES 2002-272772	20020425
US 2004102436	A1	20040527	US 2003-476196	20031023
US 7205302	B2	20070417		
MX 2003PA09800	A	20040129	MX 2003-PA9800	20031024
PRIORITY APPLN. INFO.:			JP 2001-129765	A 20010426
			WO 2002-JP4118	W 20020425

OTHER SOURCE(S): MARPAT 137:370112

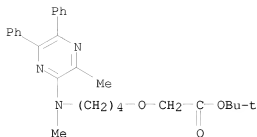
GI



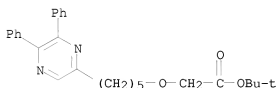
AB The invention provides compds. useful as PGI<sub>2</sub> receptor agonist and pharmaceutical compns., particularly pharmaceutical compns. containing as the active ingredient compds. represented by the general formula (I) or pharmaceutically acceptable salts thereof [wherein R<sup>1</sup> and R<sup>2</sup> are each independently optionally substituted aryl; Y is N, N(O), or optionally substituted CH; Z is N or optionally substituted CH; A is optionally substituted NH, O, S, SO, SO<sub>2</sub>, or ethylene; D is an optionally hydroxy-substituted alkylene or alkenylene; or A and D together represents a bivalent group Q<sup>1</sup> (wherein m is an integer of 0-2; q is 2 or 3; n is an integer of 0-4); E is phenylene or a single bond; G is O, S, or optionally substituted CH<sub>2</sub>; R<sup>3</sup> and R<sup>4</sup> are each independently hydrogen or alkyl; and Q is carboxyl, alkoxy-carbonyl, tetrazolyl, carbamoyl, mono- or dialkylcarbamoyl, CONHSO<sub>2</sub>R<sup>10</sup> (wherein R<sup>10</sup> is optionally substituted alkyl, aryl, aryloxy, or heterocyclyl)]. These compds. are useful as platelet aggregation inhibitors or remedies for chronic artery obstruction, intermittent limping (claudication) (Charcot's syndrome), or peripheral artery embolism. Thus, a solution of 763 mg 5,6-diphenyl-2-(methylamino)pyrazine in 4 mL DMF was added 140 mg 60% NaH, stirred at 80° for 30 min, and cooled in an ice bath followed by adding slowly a solution of 657 mg Me 2-(4-bromobutoxy)acetate in 2 mL DMF, and the resulting mixture was stirred at room temperature for 14 h to give 240 mg Me 2-[4-[N-(5,6-diphenylpyrazin-2-yl)-N-methylamino]butoxy]acetate (II). II was saponified with a mixture of 1 N aqueous NaOH and MeOH under reflux for 2 h, followed by removing the solvent under reduced pressure, adding water, extracting the aqueous solution with Et<sub>2</sub>O, neutralizing it with 1 N aqueous HCl, and extracting it with EtOAc to give 2-[4-[N-(5,6-diphenylpyrazin-2-yl)-N-methylamino]butoxy]acetic acid (III). III showed IC<sub>50</sub> of 0.2 μM for inhibiting the ADP (ADT)-induced aggregation of human blood platelet and at 1 μM inhibited the [3H]-Iloprost binding on human platelet membrane by 85%. Pharmaceutical formulations, e.g. tablet containing tert-Bu 2-[4-(5,6-diphenylpyrazin-2-ylsulfonyl)butoxy]acetate, were described.

IT 475085-07-5P 475085-55-3P  
 RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation of derivs. of heterocyclic compds. as antagonists of prostaglandin I<sub>2</sub> receptor platelet aggregation inhibitor, or remedy for chronic artery obstruction, intermittent limping, or peripheral artery embolism)

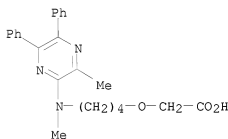
RN 475085-07-5 CAPLUS  
 CN Acetic acid, [4-[methyl(3-methyl-5,6-diphenylpyrazinyl)amino]butoxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 475085-55-3 CAPLUS  
 CN Acetic acid, [[5-(5,6-diphenylpyrazinyl)pentyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

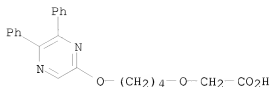


IT 475085-68-8P 475085-78-0P 475085-99-5P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of derivs. of heterocyclic compds. as antagonists of prostaglandin I2 receptor platelet aggregation inhibitor, or remedy for chronic artery obstruction, intermittent limping, or peripheral artery embolism)  
 RN 475085-68-8 CAPLUS  
 CN Acetic acid, [4-[methyl(3-methyl-5,6-diphenylpyrazinyl)amino]butoxy]-, sodium salt (9CI) (CA INDEX NAME)



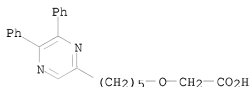
● Na

RN 475085-78-0 CAPLUS  
 CN Acetic acid, [4-[(5,6-diphenylpyrazinyl)oxy]butoxy]-, sodium salt (9CI) (CA INDEX NAME)



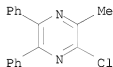
● Na

RN 475085-99-5 CAPLUS  
 CN Acetic acid, 2-[[5-(5,6-diphenyl-2-pyrazinyl)pentyl]oxy]-, sodium salt  
 (1:1) (CA INDEX NAME)

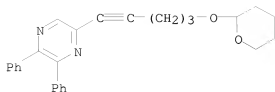


● Na

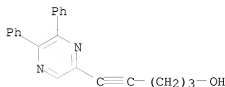
IT 93764-53-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of derivs. of heterocyclic compds. as antagonists of  
 prostaglandin I2 receptor platelet aggregation inhibitor, or remedy for  
 chronic artery obstruction, intermittent limping, or peripheral artery  
 embolism)  
 RN 93764-53-5 CAPLUS  
 CN Pyrazine, 2-chloro-3-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



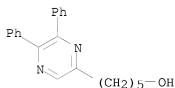
IT 475086-91-0P 475086-92-1P 475086-93-2P  
 475086-94-3P 475086-95-4P 475086-96-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation of derivs. of heterocyclic compds. as antagonists of  
 prostaglandin I2 receptor platelet aggregation inhibitor, or remedy for  
 chronic artery obstruction, intermittent limping, or peripheral artery  
 embolism)  
 RN 475086-91-0 CAPLUS  
 CN Pyrazine, 2,3-diphenyl-5-[5-[(tetrahydro-2H-pyran-2-yl)oxy]-1-pentynyl]-  
 (9CI) (CA INDEX NAME)



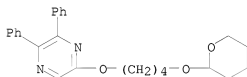
RN 475086-92-1 CAPLUS  
 CN 4-Pentyn-1-ol, 5-(5,6-diphenyl-2-pyrazinyl)- (CA INDEX NAME)



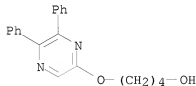
RN 475086-93-2 CAPLUS  
 CN 2-Pyrazinepentanol, 5,6-diphenyl- (CA INDEX NAME)



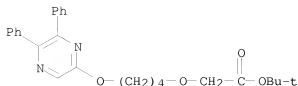
RN 475086-94-3 CAPLUS  
 CN Pyrazine, 2,3-diphenyl-5-[4-[(tetrahydro-2H-pyran-2-yl)oxy]butoxy]- (CA INDEX NAME)



RN 475086-95-4 CAPLUS  
 CN 1-Butanol, 4-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



RN 475086-96-5 CAPLUS  
 CN Acetic acid, [4-[(5,6-diphenylpyrazinyl)oxy]butoxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

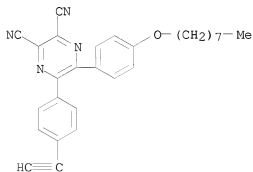


REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 116 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:670118 CAPLUS  
 DOCUMENT NUMBER: 138:89775  
 TITLE: Synthesis of spiropyran substituted 2,3-dicyanopyrazines  
 AUTHOR(S): Lee, Bum Hoon; Jaung, Jae Yun; Jeong, Sung Hoon  
 CORPORATE SOURCE: Department of Fiber and Polymer Engineering, Hanyang University, Seoul, 133-791, S. Korea  
 SOURCE: Bulletin of the Korean Chemical Society (2002), 23(8), 1049-1050  
 CODEN: BKCSDE; ISSN: 0253-2964  
 PUBLISHER: Korean Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 138:89775  
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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

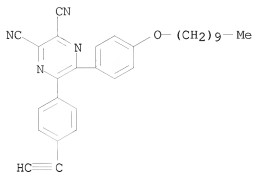
AB Novel 2,3-dicyanopyrazines, e.g. I, were synthesized by the direct coupling reaction of 6-iodospiropyran II and 2,3-dicyanopyrazine derivs. with a long alkyl chain, e.g. III. It is expected that this procedure will be useful for combining two functional dye compds. that have totally different functionalities.  
 IT 484678-55-9P 484678-60-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis of spiropyran substituted 2,3-dicyanopyrazines)  
 RN 484678-55-9 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5-(4-ethynylphenyl)-6-[4-(octyloxy)phenyl]- (CA INDEX NAME)



RN 484678-60-6 CAPLUS



CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-(4-ethynylphenyl)-  
(CA INDEX NAME)

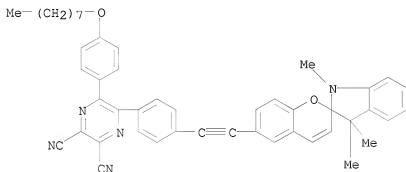


IT 484678-56-0P 484678-61-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(synthesis of spiropyran substituted 2,3-dicyanopyrazines)

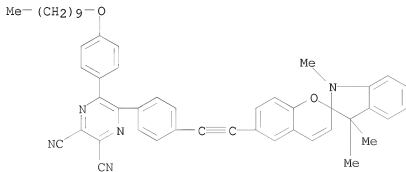
RN 484678-56-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-[(1',3'-dihydro-1',3',3'-trimethylspiro[2H-1-benzopyran-2,2'-[2H]indol]-6-yl)ethynyl]phenyl]-6-[4-(octyloxy)phenyl]- (9CI) (CA INDEX NAME)



RN 484678-61-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-[4-[(1',3'-dihydro-1',3',3'-trimethylspiro[2H-1-benzopyran-2,2'-[2H]indol]-6-yl)ethynyl]phenyl]- (9CI) (CA INDEX NAME)



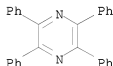
REFERENCE COUNT:

7

THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 117 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN  
 ACCESSION NUMBER: 2002:623935 CAPLUS  
 DOCUMENT NUMBER: 138:106621  
 TITLE: Novel syntheses of polysubstituted pyrroles and oxazoles by 1,3-dipolar cycloaddition reactions of benzotriazole-stabilized nitrile ylides  
 AUTHOR(S): Katritzky, Alan R.; Zhang, Suoming; Wang, Mingyi; Kolb, Hartmuth C.; Steel, Peter J.  
 CORPORATE SOURCE: Dep. of Chem., Cent. for Heterocyclic Comps., Univ. of Florida, Gainesville, FL, 32611-7200, USA  
 SOURCE: Journal of Heterocyclic Chemistry (2002), 39(4), 759-765  
 CODEN: JHTCAD; ISSN: 0022-152X  
 PUBLISHER: HeteroCorporation  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 138:106621  
 AB 1,3-Dipolar cycloaddns. of benzotriazole-stabilized nitrile ylides with benzyl  $\alpha,\beta$ -unsatd.-carboxylates and aldehydes as dipolarophiles proceeded smoothly and efficiently to give polysubstituted pyrroles and oxazoles, resp., in good yields.  
 IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of polysubstituted pyrroles and oxazoles by 1,3-dipolar cycloaddn. reactions of benzotriazole-stabilized nitrile ylides)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 118 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN  
 ACCESSION NUMBER: 2002:615461 CAPLUS  
 DOCUMENT NUMBER: 137:169502  
 TITLE: Preparation and antiviral activity for HIV-1 of substituted azaindoleoxoacetylperazines  
 INVENTOR(S): Wang, Tao; Zhang, Zhongxing; Meanwell, Nicholas A.; Kadow, John F.; Yin, Zhiwei  
 PATENT ASSIGNEE(S): Bristol-Myers Squibb Company, USA  
 SOURCE: PCT Int. Appl., 367 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

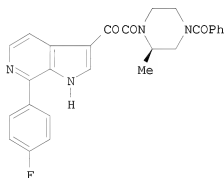
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002062423	A1	20020815	WO 2002-US455	20020102
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,				

LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,  
PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,  
UZ, VN, YU, ZA, ZM, ZW  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
CA 2437524 A1 20020815 CA 2002-2437524 20020102  
AU 2002241824 A1 20020819 AU 2002-241824 20020102  
EP 1363705 A1 20031126 EP 2002-707413 20020102  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
EE 200300359 A 20031215 EE 2003-359 20020102  
BR 2002006636 A 20040225 BR 2002-6636 20020102  
HU 2003004062 A2 20040428 HU 2003-4062 20020102  
NZ 527193 A 20040528 NZ 2002-527193 20020102  
JP 2004522755 T 20040729 JP 2002-562428 20020102  
CN 1612763 A 20050504 CN 2002-807826 20020102  
RU 2303038 C2 20070720 RU 2003-127077 20020102  
IN 2003DN01124 A 20070316 IN 2003-DN1124 20030717  
BG 108021 A 20040430 BG 2003-108021 20030722  
ZA 2003005885 A 20041101 ZA 2003-5885 20030730  
NO 2003003436 A 20031001 NO 2003-3436 20030801  
MX 2003PA06939 A 20031118 MX 2003-PA6939 20030801

PRIORITY APPLN. INFO.:

US 2001-266183P P 20010202  
US 2001-314406P P 20010823  
WO 2002-US455 W 20020102

OTHER SOURCE(S): MARPAT 137:169502  
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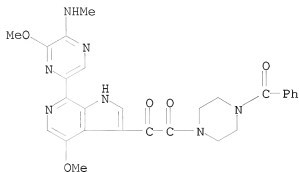
AB Title compds. Q(CO)nWCOA [Q = (un)substituted azaindolyl; W = (un)substituted piperazino; A = (un)substituted alkoxy, aryl, heteroaryl; n = 1, 2] were prepared for use as antiviral agents, alone or in combination with other antivirals, anti-infectives, immunomodulators or HIV entry inhibitors, in the treatment of HIV and AIDS. Thus, 2-chloro-3-nitropyridine was cyclized with vinylmagnesium bromide to give 7-chloro-6-azaindole which was treated with ClCOCOMe, followed by ester hydrolysis, amidation with (R)-3-methyl-1-benzoylpiperazine, and substitution with 4-FC6H4B(OH)2 to give the title compound I which had an EC50 for HIV-1 in vitro of <1  $\mu$ M.

IT 446289-50-5P 446289-52-7P  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation and antiviral activity for HIV-1 of substituted azaindoleoxoacetylpiperazines)

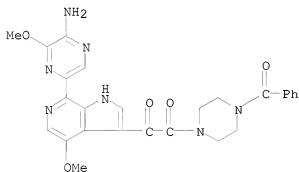
RN 446289-50-5 CAPLUS

CN Piperazine, 1-benzoyl-4-[[4-methoxy-7-[6-methoxy-5-(methylamino)pyrazinyl]-1H-pyrrolo[2,3-c]pyridin-3-yl]oxoacetyl]- (9CI) (CA INDEX NAME)



RN 446289-52-7 CAPLUS

CN Piperazine, 1-[[7-(5-amino-6-methoxypyrazinyl)-4-methoxy-1H-pyrrolo[2,3-c]pyridin-3-yl]oxoacetyl]-4-benzoyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 119 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:506396 CAPLUS

DOCUMENT NUMBER: 138:221535

TITLE: Synthesis of 2,2'-bipyridyl methane- and pyridyl pyrazine-derivatives by the catalyst of organometallic compounds

AUTHOR(S): Uhm, Jae-Kook

CORPORATE SOURCE: Dept. of Chemistry, College of Natural Science, Keimyung Univ., Taegu, 704-701, S. Korea

SOURCE: Journal of the Korean Chemical Society (2002), 46(3), 301-305

CODEN: JKCSEZ; ISSN: 1017-2548

PUBLISHER: Korean Chemical Society

DOCUMENT TYPE: Journal

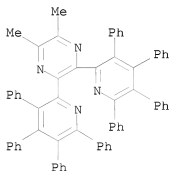
LANGUAGE: Korean

OTHER SOURCE(S): CASREACT 138:221535

AB Synthesis of pyridine and pyrazine derivs. from 2-pyridyl acetonitrile or pyrazine carbonitrile derivs. and diphenylacetylene using cobalt complexes via carbon-nitrogen cycloaddn. reaction have been studied. The cycloaddn. reaction of 2-pyridylacetonitrile and diphenylacetonitrile under CpCo(C2H4)2 catalysts did not undergo but underwent in the presence of CpCo(CO)2, namely (Cyclopentadienyl)dicarbonylcobalt, and it is assumed

that  $\text{CpCo}(\text{C}_2\text{H}_4)_2$  is so unstable that it does not undergo substitution reaction with an alkyne. Pyrazinecarbonitrile and 5,6-dimethyl-2,3-pyrazine dicarbonitrile also underwent (2+2+2) cycloaddn. reaction with diphenylacetylene under  $\text{CpCo}(\text{CO})_2$ , but 2,3-pyrazinedicarbonitrile did not undergo cycloaddn. reaction at the same reaction condition due to lack of interaction between two Me substituents.

IT 500906-08-1P, 5,6-Dimethyl-2,3-bis(3,4,5,6-tetraphenyl-2-pyridyl)pyrazine  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis of 2,2'-bipyridyl methane- and pyridyl pyrazine-derivs. by catalyst of organometallic compds.)  
 RN 500906-08-1 CAPLUS  
 CN Pyrazine, 2,3-dimethyl-5,6-bis(3,4,5,6-tetraphenyl-2-pyridinyl)- (CA INDEX NAME)



L14 ANSWER 120 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:487278 CAPLUS

DOCUMENT NUMBER: 137:325101

TITLE: New unsymmetrical difluoroaromatic compounds and estimation of their reactivities in nucleophilic substitution

AUTHOR(S): Keshtov, M. L.; Rusanov, A. L.; Keshtova, S. V.; Petrovskii, P. V.; Shchegolikhin, A. A.

CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 119991, Russia

SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (2002), 51(1), 117-123

CODEN: RCBUEY; ISSN: 1066-5285

PUBLISHER: Kluwer Academic/Consultants Bureau

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 137:325101

AB A series of previously unknown unsym. difluoroarom. compds., viz., p-fluorobenzoylphenyl(p-fluorophenyl)-substituted imidazoles, pyrazines, and quinoxalines, were synthesized according to multistep procedures with the use of chloral as the key compound. The reactivities of the resulting difluoroarom. compds. were estimated based on  $^{19}\text{F}$  and  $^{13}\text{C}$  NMR spectral data and the results of quantum-chemical calcns. The calculated charge densities on the Cipso atoms correlate linearly with the exptl. chemical shifts in the  $^{19}\text{F}$  and  $^{13}\text{C}$  NMR spectra. Difluoroarom. compds., which are characterized by  $\delta\text{F} > -110$  and  $\delta\text{C} > 163$  and by the charge d. on the Cipso atom higher than 0.08 e, are sufficiently activated to be used for the preparation of high-mol.-weight polyethers.

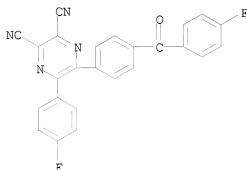
IT 473797-30-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation and nucleophilic substitution reactivities of unsym.  
difluoroarom. compds.)

RN 473797-30-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(4-fluorobenzoyl)phenyl]-6-(4-fluorophenyl)- (CA INDEX NAME)



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 121 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:332281 CAPLUS

DOCUMENT NUMBER: 136:356381

TITLE: Composition containing an azaphthalocyanine and use in ink-jet printing inks and ink cartridges

INVENTOR(S): Gregory, Peter; Foster, Clive Edwin

PATENT ASSIGNEE(S): Avecia Limited, UK

SOURCE: PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

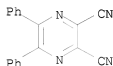
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002034844	A1	20020502	WO 2001-GB4374	20011001
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2001092047	A5	20020506	AU 2001-92047	20011001
PRIORITY APPLN. INFO.:			GB 2000-26467	A 20001027
			WO 2001-GB4374	W 20011001

OTHER SOURCE(S): MARPAT 136:356381

AB A process for coloration of paper comprises applying thereto a composition comprising a medium and an azaphthalocyanine compound. Also claimed are compns. comprising azaphthalocyanines, novel azaphthalocyanines, a process for the coloration of a substrate other than paper and ink-jet printer cartridge comprising the azaphthalocyanine composition. Thus, reacting benzil with diaminomaleonitrile, and mixing the resulting 2,3-dicyano-5,6-diphenylpyrazine with NiCl<sub>2</sub> suspended in quinoline gave a jade solid which was sulfonated with fuming sulfuric acid to give a dye having λ<sub>max</sub>

in water at 603 and 638 nm.  
 IT 52197-23-6P, 2,3-Dicyano-5,6-diphenylpyrazine  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (intermediate; composition containing azaphthalocyanine and use in ink-jet  
 printing inks and ink cartridges)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



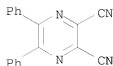
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 122 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:286874 CAPLUS  
 DOCUMENT NUMBER: 136:306087  
 TITLE: Photosensitizer for photodynamic therapy  
 INVENTOR(S): Luk'yanets, E. A.; Negrinovich, V. M.; Yuzhakova, O.  
 A.; Kaliya, O. L.; Kuznetsova, N. A.; Pykhtina, E. V.;  
 Ulanova, L. A.; Kovaleva, M. A.; Luzhkov, Yu. M.;  
 Vorozhtsov, G. N.; Meerovich, G. A.; Torshina, N. L.  
 PATENT ASSIGNEE(S): Gosudarstvennyi Nauchnyi Tsentr Rf "NIOPIK", Russia  
 SOURCE: Russ., No pp. given  
 CODEN: RUXXE7  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Russian  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2164136	C2	20010320	RU 1998-116773	19980909
PRIORITY APPLN. INFO.:			RU 1998-116773	19980909

OTHER SOURCE(S): MARPAT 136:306087  
 AB The photosensitizer is a water-soluble derivative of tetraazaporphyrin titanyl  
 complexes with general formula  $RnTiO$ , wherein L is a ligand selected from  
 a group including phthalocyanine, naphthalocyanine, and  
 tetrapyrazinoporphyrazine; R is a water-solubilization hydrophilic  
 substituent; and  $n = 3-10$ . Novel photosensitizers show high efficiency in  
 multivariable effect on deep tumor tissues and other pathol. neoplasms  
 under hypoxia conditions.

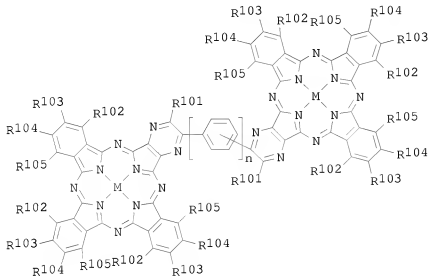
IT 52197-23-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of titanyl pyrazinophthalocyanine as photosensitizer for  
 photodynamic therapy)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 123 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:216339 CAPLUS  
 DOCUMENT NUMBER: 136:270453  
 TITLE: Electrophotographic photoreceptor containing  
 tetraazaporphyrin derivative and charge-transporting  
 polymer  
 INVENTOR(S): Komai, Yuko; Nanba, Michihiko; Shimada, Tomoyuki;  
 Shoshi, Masayuki; Tadokoro, Kaoru; Tanaka, Chiaki;  
 Sasaki, Masaomi  
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002082460	A	20020322	JP 2000-269095	20000905
PRIORITY APPLN. INFO.:			JP 2000-269095	20000905
OTHER SOURCE(S):	MARPAT 136:270453			

GI



AB The title photoreceptor has light-sensitive layers containing a tetraazaporphyrin derivative mixture and a charge-transporting compound on an electroconductive support, wherein the tetraazaporphyrin derivative mixture contains metal bis(tetraazaporphyrin derivative) I (R101 = H, alkyl, aryl; R102-105 = H, halo, alkyl, aryl, cycloalkyl, nitro, cyano; n = 1-2; M = metal, metal oxide, metal hydroxide, etc.) and a metal tetraazaporphyrin derivative. The photoreceptor shows the high sensitivity and the good wearing-resistance.

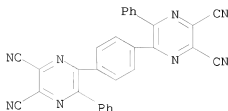
IT 160904-13-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (tetraazaporphyrin derivative in electrophotog. photoreceptor)

RN 160904-13-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,5'-(1,4-phenylene)bis[6-phenyl- (9CI) (CA

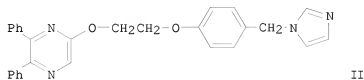
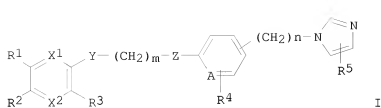


INDEX NAME)



L14 ANSWER 124 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002:10467 CAPLUS  
 DOCUMENT NUMBER: 136:69823  
 TITLE: Preparation of imidazole derivatives or salts thereof  
 and drugs containing the derivatives or the salts  
 INVENTOR(S): Konno, Fujiko; Nagao, Yoshihiro; Isomae, Kazuo;  
 Ohtsuka, Mari; Takahashi, Yoshiyuki; Ishii, Fumio;  
 Hirota, Hiroyuki; Takeda, Sunao; Kawamoto, Noriyuki;  
 Honda, Haruyoshi; Sato, Susumu  
 PATENT ASSIGNEE(S): Ssp Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 53 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002000648	A1	20020103	WO 2001-JP4836	20010608
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2001064223	A5	20020108	AU 2001-64223	20010608
CA 2410391	A1	20021128	CA 2001-2410391	20010608
EP 1295880	A1	20030326	EP 2001-938563	20010608
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2003207896	A1	20031106	US 2002-258610	20021105
US 6958353	B2	20051025		
HK 1055735	A1	20060707	HK 2003-108049	20031106
PRIORITY APPLN. INFO.:			JP 2000-194024	A 20000628
			WO 2001-JP4836	W 20010608
OTHER SOURCE(S):		MARPAT 136:69823		
GI				



AB Title compds. [I; R1, R2 each independently = aryl, heteroaryl; A, X1, X2 each independently = N, CH; Y, Z each independently = O, S, NH, SO2, CH2, NCH3; R3, R4, R5 each independently = H, alkyl, NH2, alkoxy, Cl; m = 1, 2, 3, 4; n = 0, 1, 2, 3, 4] and salts are prepared and formulation discussed. Title compds. I exhibit excellent inhibitory activities against the production of NO and IL-6 and are useful in the prevention or treatment of diseases resulting from over-development of NO and IL-6. Thus, the title compound II was prepared and tested as antiinflammatory in male ICR mouse with inhibition result at 30.5% for 3 mg/kg dosage.

IT 385413-14-9P 385413-16-1P 385413-18-3P  
 385413-20-7P 385413-23-0P 385413-24-1P  
 385413-26-3P 385413-32-1P 385413-36-5P  
 385413-38-7P 385413-44-5P 385413-46-7P  
 385413-48-9P 385413-50-3P 385413-52-5P  
 385413-54-7P 385413-58-1P 385413-60-5P  
 385413-66-1P 385413-68-3P 385413-72-9P  
 385413-82-1P 385413-94-5P 385414-00-6P  
 385414-20-0P 385414-80-2P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

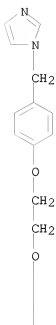
(preparation of imidazole derivs. or salts thereof and drugs containing derivs.

or salts)

RN 385413-14-9 CAPLUS

CN Pyrazine, 5-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-2,3-diphenyl- (CA INDEX NAME)

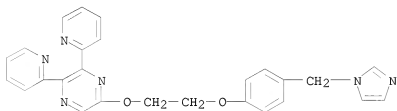
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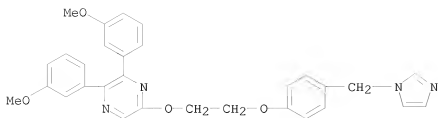
PAGE 2-A



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 CN Pyrazine, 5-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-2,3-di-2-pyridinyl- (CA INDEX NAME)

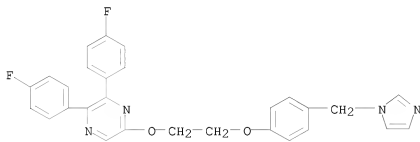


RN 385413-18-3 CAPLUS  
 CN Pyrazine, 5-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-2,3-bis(3-methoxyphenyl)- (CA INDEX NAME)



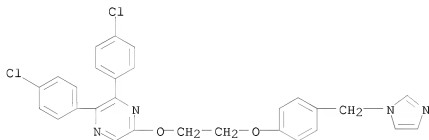
RN 385413-20-7 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]- (CA INDEX NAME)



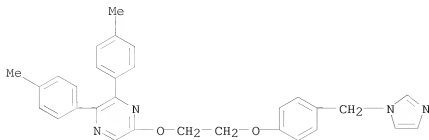
RN 385413-23-0 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]- (CA INDEX NAME)



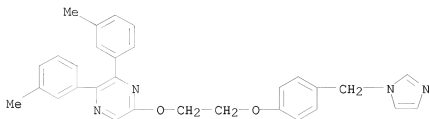
RN 385413-24-1 CAPLUS

CN Pyrazine, 5-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-2,3-bis(4-methylphenyl)- (CA INDEX NAME)



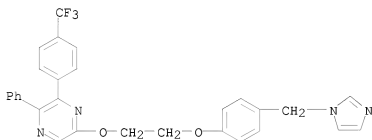
RN 385413-26-3 CAPLUS

CN Pyrazine, 5-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-2,3-bis(3-methylphenyl)- (CA INDEX NAME)



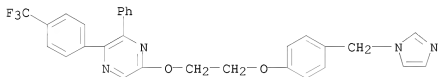
RN 385413-32-1 CAPLUS

CN Pyrazine, 5-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-2-phenyl-3-[4-(trifluoromethyl)phenyl]- (CA INDEX NAME)



RN 385413-36-5 CAPLUS

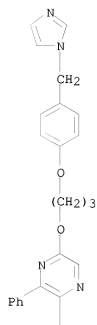
CN Pyrazine, 5-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-3-phenyl-2-[4-(trifluoromethyl)phenyl]- (CA INDEX NAME)



RN 385413-38-7 CAPLUS

CN Pyrazine, 5-[3-[4-(1H-imidazol-1-ylmethyl)phenoxy]propoxy]-2,3-diphenyl- (CA INDEX NAME)

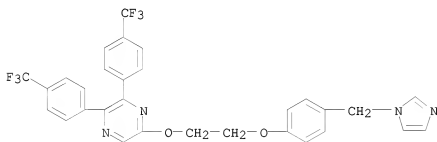
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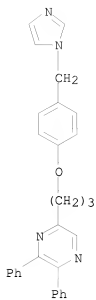
PAGE 2-A



RN 385413-44-5 CAPLUS  
 CN Pyrazine, 5-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-2,3-bis[4-(trifluoromethyl)phenyl]- (CA INDEX NAME)

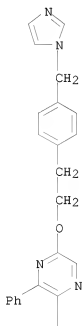


RN 385413-46-7 CAPLUS  
 CN Pyrazine, 5-[3-[4-(1H-imidazol-1-ylmethyl)phenoxy]propyl]-2,3-diphenyl- (CA INDEX NAME)



RN 385413-48-9 CAPLUS  
 CN Pyrazine, 5-[2-[4-(1H-imidazol-1-ylmethyl)phenyl]ethoxy]-2,3-diphenyl-  
 (CA INDEX NAME)

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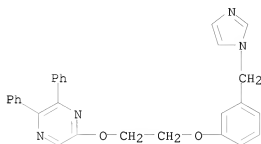


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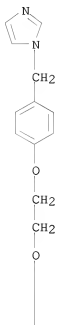
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CN Pyrazine, 5-[2-[3-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-2,3-diphenyl-  
(CA INDEX NAME)

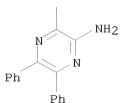


RN 385413-52-5 CAPLUS

CN Pyrazinamine, 3-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-5,6-diphenyl-  
(9CI) (CA INDEX NAME)



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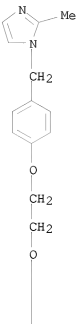


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RN 385413-54-7 CAPLUS  
 CN Pyrazine, 5-[2-[4-[(2-methyl-1H-imidazol-1-yl)methyl]phenoxy]ethoxy]-2,3-diphenyl- (CA INDEX NAME)

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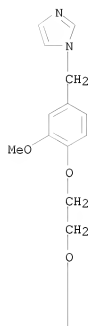


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RN 385413-58-1 CAPLUS  
 CN Pyrazine, 5-[2-[4-(1H-imidazol-1-ylmethyl)-2-methoxyphenoxy]ethoxy]-2,3-diphenyl- (CA INDEX NAME)

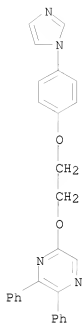
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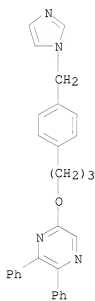


RN 385413-60-5 CAPLUS  
CN Pyrazine, 5-[2-[4-(1H-imidazol-1-yl)phenoxy]ethoxy]-2,3-diphenyl- (CA  
INDEX NAME)



RN 385413-66-1 CAPLUS

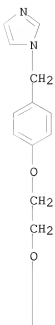
CN Pyrazine, 5-[3-[4-(1H-imidazol-1-ylmethyl)phenyl]propoxy]-2,3-diphenyl-  
(CA INDEX NAME)



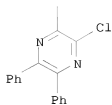
RN 385413-68-3 CAPLUS

CN Pyrazine, 2-chloro-3-[2-[4-(1H-imidazol-1-ylmethyl)phenoxy]ethoxy]-5,6-  
diphenyl- (CA INDEX NAME)

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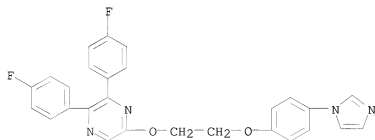


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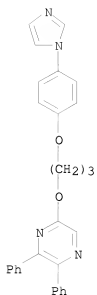
RN 385413-72-9 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-[2-[4-(1H-imidazol-1-yl)phenoxy]ethoxy]- (CA INDEX NAME)



RN 385413-82-1 CAPLUS

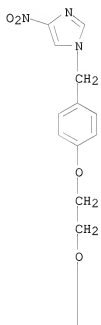
CN Pyrazine, 5-[3-[4-(1H-imidazol-1-yl)phenoxy]propoxy]-2,3-diphenyl- (CA INDEX NAME)



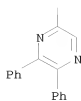
RN 385413-94-5 CAPLUS

CN Pyrazine, 5-[2-[4-[(4-nitro-1H-imidazol-1-yl)methyl]phenoxy]ethoxy]-2,3-diphenyl- (CA INDEX NAME)

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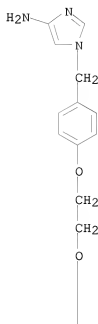


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RN 385414-00-6 CAPLUS  
 CN 1H-Imidazol-4-amine, 1-[[4-[2-[(5,6-diphenylpyrazinyl)oxy]ethoxy]phenyl]methyl]- (9CI) (CA INDEX NAME)

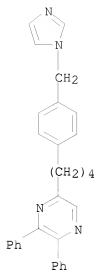
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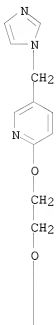


RN 385414-20-0 CAPLUS  
 CN Pyrazine, 5-[4-[4-(1H-imidazol-1-ylmethyl)phenyl]butyl]-2,3-diphenyl- (CA INDEX NAME)



RN 385414-80-2 CAPLUS  
 CN Pyrazine, 5-[2-[[5-(1H-imidazol-1-ylmethyl)-2-pyridinyl]oxy]ethoxy]-2,3-diphenyl- (CA INDEX NAME)

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IT 385415-00-9

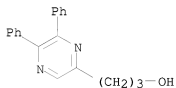
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of imidazole derivs. or salts thereof and drugs containing derivs.

or salts)

RN 385415-00-9 CAPLUS

CN Pyrazinepropanol, 5,6-diphenyl- (9CI) (CA INDEX NAME)



IT 385414-84-6P 385414-88-0P

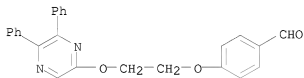
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of imidazole derivs. or salts thereof and drugs containing derivs.

or salts)

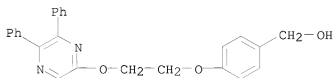
RN 385414-84-6 CAPLUS

CN Benzaldehyde, 4-[2-[(5,6-diphenylpyrazinyl)oxy]ethoxy]- (9CI) (CA INDEX NAME)



RN 385414-88-0 CAPLUS

CN Benzenemethanol, 4-[2-[(5,6-diphenylpyrazinyl)oxy]ethoxy]- (9CI) (CA INDEX NAME)



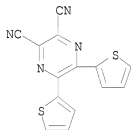
REFERENCE COUNT:

6

THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT



ACCESSION NUMBER: 2001:853921 CAPLUS  
 DOCUMENT NUMBER: 136:199881  
 TITLE: Non-linear optical properties of new bridged bis-thienyls I. Pyrazine-based bridges: theory, synthesis and spectra  
 AUTHOR(S): Lukes, Vladimir; Breza, Martin; Vegh, Daniel; Hrdlovic, Pavol; Krajeovic, Jozef; Laurinc, Viliam  
 CORPORATE SOURCE: Department of Chemical Physics, Slovak University of Technology, Bratislava, SK-812 37, Slovakia  
 SOURCE: Synthetic Metals (2001), 124(2-3), 279-286  
 CODEN: SYMEDZ; ISSN: 0379-6779  
 PUBLISHER: Elsevier Science S.A.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 136:199881  
 AB The conformational anal. of 2,3-bis(2'-thienyl)pyrazine (A), 2,3-dicyano-5,6-bis(2'-thienyl)pyrazine (B), 2,3-difluoro-5,6-bis(2'-thienyl)pyrazine (C), 2,3-bis(2'-thienyl)furo[3,4-b]pyrazine (D), 2,3-bis(2'-thienyl)pyrrolo[3,4-b]pyrazine (E), 2,3-bis(2'-thienyl)thieno[3,4-b]pyrazine (F), 2,3-bis(2'-thienyl)quinoxaline (G), 2,3-bis(2'-thienyl)pyrido[3,4-b]pyrazine (H) and 2,3-bis(2'-thienyl)pyrido[2,3-b]pyrazine (I) is elaborated using semiempirical Austin Model 1 (AM1) method. The electron absorption spectra for stable conformers are calculated by ZINDO/S method. The influence of the bridge variations on the electronic polarizability and second hyperpolarizability is investigated using the time-dependent Hartree-Fock method in AM1 approach. The synthesis and spectral measurements of the most promising B, F, G and I compds. are presented. Our results indicate that the G and I ones seem to be suitable candidates for the subsequent preparation of the electro-optical materials.  
 IT 219581-08-5P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (non-linear optical properties of pyrazine-based bridged bithienyls)  
 RN 219581-08-5 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-thienyl- (CA INDEX NAME)



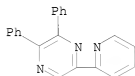
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 126 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:838706 CAPLUS  
 DOCUMENT NUMBER: 136:162456  
 TITLE: Detection of firearm imprints on the hands of suspects: effectiveness of PDT reaction  
 AUTHOR(S): Leifer, Amihud; Avissar, Yaniv; Berger, Shmuel; Wax, Hagay; Donchin, Yoel; Almog, Joseph  
 CORPORATE SOURCE: Division of Identification and Forensic Science (DIFS), Israel Police National Headquarters, Jerusalem, Israel  
 SOURCE: Journal of Forensic Sciences (2001), 46(6), 1442-1446

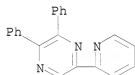
CODEN: JFSCAS; ISSN: 0022-1198

PUBLISHER: American Society for Testing and Materials  
DOCUMENT TYPE: Journal  
LANGUAGE: English

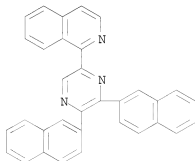
- AB Pyridyldiphenyl triazine (PDT) and three of its analogs were compared as practical reagents for visualizing unseen impressions left on the hands of a person who has held a firearm. The parent compound, PDT, gave the best results using intensity and clarity as measuring criteria. The effectiveness of the PDT reaction was then studied on 147 volunteers who had held firearms in their hands. Identifiable impressions of the metallic parts of the weapons were developed on the hands of 103 volunteers (70%). Results with females were slightly higher than with males, however, the difference was possibly statistically insignificant, and needs further study. Ferroprint and Ferrotrace, com. preps. that are based on the PDT reaction, have become a part of the professional equipment of every crime scene technician in Israel.
- IT 397863-89-7 397863-89-7D, analogs 397863-91-1  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (detection of firearm imprints on hands of suspects-effectiveness of pyridyldiphenyl triazine reaction)
- RN 397863-89-7 CAPLUS
- CN Pyrazine, 2,3-diphenyl-5-(2-pyridinyl)- (CA INDEX NAME)



- RN 397863-89-7 CAPLUS
- CN Pyrazine, 2,3-diphenyl-5-(2-pyridinyl)- (CA INDEX NAME)



- RN 397863-91-1 CAPLUS
- CN Isoquinoline, 1-(5,6-di-2-naphthalenylpyrazinyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 127 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:755282 CAPLUS

DOCUMENT NUMBER: 136:207032

TITLE: Spectral characteristics of bisthiophenes and terthiophenes linked with heterocyclic unit in solution and polymer matrix

AUTHOR(S): Hrdlovic, Pavol; Krajcovic, Jozef; Vegh, Daniel

CORPORATE SOURCE: Polymer Institute, Slovak Academy of Sciences, Bratislava, 842 36, Slovakia

SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (2001), 144(2-3), 73-82

CODEN: JPPCEJ; ISSN: 1010-6030

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

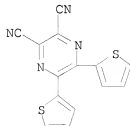
LANGUAGE: English

AB Spectral characteristics of derivs. of thiophene substituted on heteroarom. cycle as pyrazine was compared with terthiophene linked with cyano- and hydrazo groups. The absorption, fluorescence and its lifetime were measured in solution (methanol, cyclohexane) and in polymer matrixes (polystyrene, PS; PMMA; and poly(vinyl chloride) (PVC)). Derivs. with two thiophene units substitute on pyrazine exhibit the lowest wavenumber band in the region 26,320-25,600 cm<sup>-1</sup> and log .vepsiln. .apprx.4.0, which is not influenced by the medium. Derivs. with benzene and pyridine ring annealed to pyrazine (2,3-bis-(2'-thienyl)quinoxaline (I), 2,3-bis-(2'-thienyl)pyrido[2,3-b]pyrazine (III)) exhibit fluorescence in polar methanol with maximum at 22,200 cm<sup>-1</sup> and quantum yield of about 0.2 which is blue-shifted in going to non-polar solvent. The maximum fluorescence is slightly blue-shifted in polymer matrixes as compared to methanol. Derivs. with annealed thiophene to pyrazine or substituted with two cyano groups (2,3-bis-(2'-thienyl)thieno[3,4-b]pyrazine (II), 2,3-dicyano-5,6-bis(2'-thienyl)pyrazine (IV)) do not yield any emission. Derivs. with terthiophene structural units ([2,2',5',2'']-terthiophene-[2]-thienylacrylonitrile (V) [2,2',5',2'']-terthiophene-5-carbaldehydehydrazone (VI)) exhibit fluorescence with maximum around 20,000 cm<sup>-1</sup>. The lifetime of fluorescence of all thiophene was 1 ns or shorter. The polymer matrixes increase the intensity of fluorescence to some extent and prolong the lifetime of thiophene derivs. Derivative VI exhibits some tendency to an aggregation at higher concentration above 0.01 mol kg<sup>-1</sup> in polymer matrixes.

IT 219581-08-5P, 2,3-Dicyano-5,6-bis(2'-thienyl)pyrazine  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(optical absorption and emission and lifetime of emission of bis-thiophenes and ter-thiophenes linked by heterocyclic unit studied in solns. and in polymer matrixes)

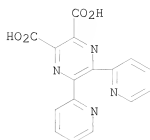
RN 219581-08-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-thienyl- (CA INDEX NAME)



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 128 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:749418 CAPLUS  
 DOCUMENT NUMBER: 135:378975  
 TITLE: Hydrogen bonding in the inner-salt zwitterion and in two different charged forms of 5,6-bis(2-pyridyl)pyrazine-2,3-dicarboxylic acid  
 AUTHOR(S): Alfonso, Montserrat; Wang, Yi; Stoeckli-Evans, Helen  
 CORPORATE SOURCE: Institut de Chimie, Universite de Neuchatel, Neuchatel, CH-2007, Switz.  
 SOURCE: Acta Crystallographica, Section C: Crystal Structure Communications (2001), C57(10), 1184-1188  
 CODEN: ACSCEE; ISSN: 0108-2701  
 PUBLISHER: Munksgaard International Publishers Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB 5,6-Bis(2-pyridyl)pyrazine-2,3-dicarboxylic acid exists as an inner-salt zwitterion, 3-carboxy-5-(2-pyridinio)-6-(2-pyridyl)pyrazine-2-carboxylate, (Ia), C16H10N4O4. The adjacent pyridine and pyridinium rings are almost coplanar due to the presence of an intramol. H bond involving the pyridine N atom and the NH H atom of the pyridinium group. In the crystal of (Ia), symmetry-related mols. are H bonded via the carboxylic acid OH group and one of the carboxylate O atoms to form a polymer, which exhibits a channel-type structure. In the HCl, HClO4 and HPF6 salts, 6-carboxy-5-carboxylatopyrazine-2,3-diyl-di-2-pyridinium chloride 2.25-hydrate, (II), C16H11N4O4+·Cl-·2.25H2O, 6-carboxy-5-carboxylatopyrazine-2,3-diyl-di-2-pyridinium perchlorate trihydrate, (IIIa), C16H11N4O4+·ClO4-·3H2O, and 6-carboxy-5-carboxylatopyrazine-2,3-diyl-di-2-pyridinium hexafluorophosphate trihydrate, (IIIb), C16H11N4O4+·PF6-·3H2O, both pyridine rings are protonated. In the perchlorate form, and in the isomorphous hexafluorophosphate form, the mol. possesses C2 symmetry, with has a sym. intramol. H bond involving the adjacent carboxylate and carboxylic acid substituents. In the crystals of the chloride and perchlorate (or hexafluorophosphate) salts, H-bonded polymers are formed which are three-dimensional and 1-dimensional, resp. Crystallog. data are given.  
 IT 374115-73-8 374115-74-9 374115-75-0  
 RL: PRP (Properties)  
 (crystal structure of)  
 RN 374115-73-8 CAPLUS  
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl-, monohydrochloride, hydrate (4:9) (9CI) (CA INDEX NAME)



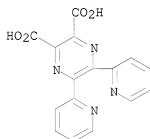
● HCl

● 9/4 H<sub>2</sub>O

RN 374115-74-9 CAPLUS  
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl-, monoperchlorate, trihydrate (9CI) (CA INDEX NAME)

CM 1

CRN 374115-72-7  
 CMF C16 H10 N4 O4



CM 2

CRN 7601-90-3  
 CMF Cl H O4

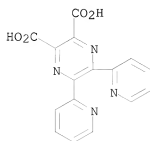


RN 374115-75-0 CAPLUS  
 CN Phosphate(1-), hexafluoro-, hydrogen, compd. with 5,6-di-2-pyridinyl-2,3-pyrazinedicarboxylic acid (1:1), trihydrate (9CI) (CA INDEX NAME)

CM 1

CRN 374115-72-7

CMF C16 H10 N4 O4

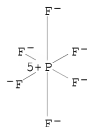


CM 2

CRN 16940-81-1

CMF F6 P . H

CCI CCS



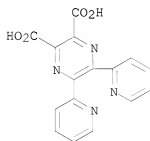
● H<sup>+</sup>

IT 374115-72-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(crystal structure of inner-salt zwitterionic)

RN 374115-72-7 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl- (CA INDEX NAME)

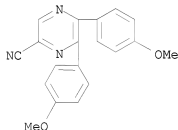


REFERENCE COUNT:

10

THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 129 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:629005 CAPLUS  
 DOCUMENT NUMBER: 136:5954  
 TITLE: Synthesis and bioactivities of novel pyridazine derivatives: inhibitors of interleukin-1 $\beta$  (IL-1 $\beta$ ) production  
 AUTHOR(S): Matsuda, T.; Aoki, T.; Ohgiya, T.; Koshi, T.; Ohkuchi, M.; Shigyo, H.  
 CORPORATE SOURCE: Tokyo Research Laboratories, Kowa Company Ltd., Higashimurayama, Tokyo, 189-0022, Japan  
 SOURCE: Bioorganic & Medicinal Chemistry Letters (2001), 11(17), 2369-2372  
 CODEN: BMCLE8; ISSN: 0960-894X  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 136:5954  
 AB New pyridazine derivs. were prepared, and their abilities to inhibit IL-1 $\beta$  production were evaluated. Some compds. showed potent inhibitory activity against IL-1 $\beta$  production in HL-60 cells stimulated with lipopolysaccharide (LPS). The synthesis and structure-activity relations of these compds. are described.  
 IT 122956-27-8P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
 (preparation and bioactivities of pyridazine inhibitors of interleukin-1 $\beta$  production)  
 RN 122956-27-8 CAPLUS  
 CN Pyrazinecarbonitrile, 5,6-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



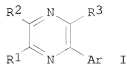
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 130 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:617986 CAPLUS  
 DOCUMENT NUMBER: 135:180787  
 TITLE: Preparation of substituted arylpyrazines and their binding with CRF1 receptors  
 INVENTOR(S): Yoon, Taeyoung; Ge, Ping; Horvath, Raymond F.; De Lombaert, Stephane; Hodgetts, Kevin J.; Doller, Dario; Zhang, Cunyu  
 PATENT ASSIGNEE(S): Neurogen Corporation, USA  
 SOURCE: PCT Int. Appl., 193 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001060806	A2	20010823	WO 2001-US5264	20010216
WO 2001060806	A3	20020207		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2398937	A1	20010823	CA 2001-2398937	20010216
EP 1255740	A2	20021113	EP 2001-910939	20010216
EP 1255740	B1	20051019		
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US 2003018035	A1	20030123	US 2001-788315	20010216
US 6995161	B2	20060207		
EE 200200453	A	20031215	EE 2002-453	20010216
HU 2003001573	A2	20031229	HU 2003-1573	20010216
JP 2004500383	T	20040108	JP 2001-560191	20010216
BR 2001008363	A	20040210	BR 2001-8363	20010216
EP 1500653	A1	20050126	EP 2004-25531	20010216
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
NZ 520484	A	20050324	NZ 2001-520484	20010216
TW 232215	B	20050511	TW 2001-90103566	20010216
AT 307121	T	20051115	AT 2001-910939	20010216
AU 783915	B2	20051222	AU 2001-38494	20010216
ES 2247070	T3	20060301	ES 2001-1910939	20010216
BG 106968	A	20030430	BG 2002-106968	20020731
ZA 2002006103	A	20030820	ZA 2002-6103	20020731
IN 2002MN01065	A	20050304	IN 2002-MN1065	20020807
MX 2002PA07868	A	20030210	MX 2002-PA7868	20020814
NO 2002003869	A	20020911	NO 2002-3869	20020815
HK 1051191	A1	20060818	HK 2003-103353	20030513
US 2005215559	A1	20050929	US 2005-107148	20050415
US 7202250	B2	20070410		
US 2007225287	A1	20070927	US 2007-675648	20070216
IN 2007MN01047	A	20070810	IN 2007-MN1047	20070712
PRIORITY APPLN. INFO.:				
			US 2000-182934P	P 20000216
			US 2000-206455P	P 20000522
			EP 2001-910939	A3 20010216
			US 2001-788315	A3 20010216
			WO 2001-US5264	W 20010216
			IN 2002-MN1065	A3 20020807
			US 2005-107148	A3 20050415

OTHER SOURCE(S): MARPAT 135:180787

GI



AB Arylpyrazine compds. I [Ar = substituted Ph, naphthyl, heterocyclyl; R<sub>1</sub>, R<sub>3</sub> = H, halo, cyano, NO<sub>2</sub>, etc.; R<sub>2</sub> = halo, amino, alkyl, etc.], including



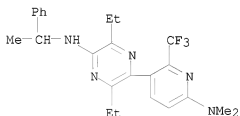
arylpyrazines that can bind with high affinity and high selectivity to CRF1 receptors, including human CRF1 receptors, were prepared E.g., N-(1-ethylpropyl)-5-(2,4-dimethoxyphenyl)-3,6-dimethylpyrazine-2-amine was prepared by reaction of 2-chloro-3,6-dimethylpyrazine with 1-ethylpropylamine, followed by bromination and reaction with 2,4-dimethoxybenzeneboronic acid.

IT 355834-83-2P 355835-39-1P 355835-40-4P  
355835-53-9P 355835-54-0P 355835-70-0P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of substituted arylpyrazines and their binding with CRF1 receptors)

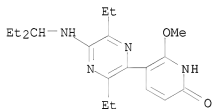
RN 355834-83-2 CAPLUS

CN Pyrazinamine, 5-[6-(dimethylamino)-2-(trifluoromethyl)-3-pyridinyl]-3,6-diethyl-N-(1-phenylethyl)- (9CI) (CA INDEX NAME)



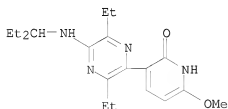
RN 355835-39-1 CAPLUS

CN 2(1H)-Pyridinone, 5-[3,6-diethyl-5-[(1-ethylpropyl)amino]pyrazinyl]-6-methoxy- (9CI) (CA INDEX NAME)



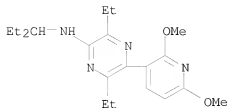
RN 355835-40-4 CAPLUS

CN 2(1H)-Pyridinone, 3-[3,6-diethyl-5-[(1-ethylpropyl)amino]pyrazinyl]-6-methoxy- (9CI) (CA INDEX NAME)

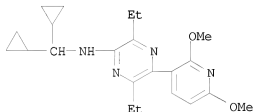


RN 355835-53-9 CAPLUS

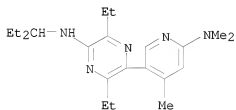
CN Pyrazinamine, 5-(2,6-dimethoxy-3-pyridinyl)-3,6-diethyl-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)



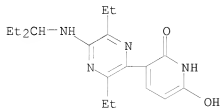
RN 355835-54-0 CAPLUS  
 CN Pyrazinamine, N-(dicyclopropylmethyl)-5-(2,6-dimethoxy-3-pyridinyl)-3,6-diethyl- (9CI) (CA INDEX NAME)



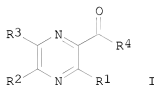
RN 355835-70-0 CAPLUS  
 CN Pyrazinamine, 5-[6-(dimethylamino)-4-methyl-3-pyridinyl]-3,6-diethyl-N-(1-ethylpropyl)- (9CI) (CA INDEX NAME)



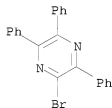
IT 355836-12-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of substituted arylpyrazines and their binding with CRF1 receptors)  
 RN 355836-12-3 CAPLUS  
 CN 2(1H)-Pyridinone, 3-[3,6-diethyl-5-[(1-ethylpropyl)amino]pyrazinyl]-6-hydroxy- (9CI) (CA INDEX NAME)



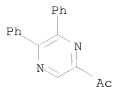
L14 ANSWER 131 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:584427 CAPLUS  
 DOCUMENT NUMBER: 135:318479  
 TITLE: Studies on pyrazines; 38: acylation of bromopyrazines and 2-bromopyridine via copper-cocatalytic Stille reaction  
 AUTHOR(S): Sato, Nobuhiro; Narita, Nobuhiko  
 CORPORATE SOURCE: Graduate School of Integrated Science, Yokohama City University, Yokohama, 236-0027, Japan  
 SOURCE: Synthesis (2001), (10), 1551-1555  
 CODEN: SYNTBF; ISSN: 0039-7881  
 PUBLISHER: Georg Thieme Verlag  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 135:318479  
 GI



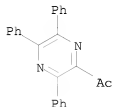
AB Synthesis of acetyl- and propionylpyrazines I (R1 = H, Me, Ph; R2 = H, Ph; R3 = H, Ph; R4 = Me, Et) was achieved by copper(I) iodide co-catalytic Stille reaction of the corresponding bromopyrazines with the appropriate tributyl(1-ethoxyalkenyl)tin and then acidic hydrolysis. The optimal reaction conditions involve the combination of 15 mol% CuI with 5 mol% of PdCl2(Ph3P)2. Similarly, 2-acylpyridines and propionylbenzenes were prepared from the corresponding aryl bromides.  
 IT 243472-73-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of acetyl- and propionylpyrazines and -pyridines via acylation of bromopyrazines and bromopyridine in a CuI co-catalytic Stille reaction)  
 RN 243472-73-3 CAPLUS  
 CN Pyrazine, bromotriphenyl- (9CI) (CA INDEX NAME)



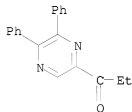
IT 367519-16-2P 367519-19-5P 367519-23-1P  
 367519-26-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of acetyl- and propionylpyrazines and -pyridines via acylation of bromopyrazines and bromopyridine in a CuI co-catalytic Stille reaction)  
 RN 367519-16-2 CAPLUS  
 CN Ethanone, 1-(5,6-diphenylpyrazinyl)- (9CI) (CA INDEX NAME)



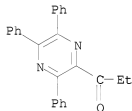
RN 367519-19-5 CAPLUS  
 CN Ethanone, 1-(triphenylpyrazinyl)- (9CI) (CA INDEX NAME)



RN 367519-23-1 CAPLUS  
 CN 1-Propanone, 1-(5,6-diphenylpyrazinyl)- (9CI) (CA INDEX NAME)



RN 367519-26-4 CAPLUS  
 CN 1-Propanone, 1-(triphenylpyrazinyl)- (9CI) (CA INDEX NAME)

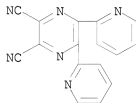


REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 132 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2001:237341 CAPLUS  
 DOCUMENT NUMBER: 135:70060  
 TITLE: Nickel-mediated alcoholysis reaction of carbon-nitrogen triple bond: structural characterization of an unprecedented moisture stable imido ester with an E-configuration  
 AUTHOR(S): Bu, X.-H.; Du, M.; Tanaka, K.; Shionoya, M.; Shiro, M.

CORPORATE SOURCE: Department of Chemistry, Nankai University, Tianjin, 300071, Peop. Rep. China  
SOURCE: Inorganic Chemistry Communications (2001), 4(3), 150-152  
CODEN: ICCOFP; ISSN: 1387-7003  
PUBLISHER: Elsevier Science S.A.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 135:70060

AB The x-ray structural characterization of a nickel complex of a moisture stable imido ester with an E-configuration, obtained from the nickel(II)-mediated alcoholysis reaction of the nitrile group of a newly synthesized 5,6-dicyano-2,3-di(2-pyridyl)pyrazine compound (L), is reported. This complex, [Ni(L1)2] (C104)2, (L1 = 5-cyano-6-methoxy(imino)methyl-2,3-di(2-pyridyl)pyrazine) crystallized in the orthorhombic space group Pna21, R = 0.040, and adopts a compressed octahedral geometry with the E-configuration of the imido ester stabilized by the coordination of the imino-nitrogen to nickel.  
IT 118553-90-5P, 5,6-Dicyano-2,3-di(2-pyridyl)pyrazine  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(reactant; preparation and crystal structure of nickel(II) complex of moisture stable imido ester with E-configuration, cyano(methoxy(imino)methyl)di(pyridyl)pyrazine, prepared by nickel-mediated alcoholysis of carbon-nitrogen triple bond)  
RN 118553-90-5 CAPLUS  
CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



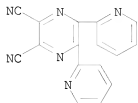
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 133 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2001:109455 CAPLUS  
DOCUMENT NUMBER: 134:200724  
TITLE: 5,6-Bis(2-pyridyl)-2,3-pyrazinedicarbonitrile  
AUTHOR(S): Du, Miao; Bu, Xian He; Liu, He; Leng, Xue Bing  
CORPORATE SOURCE: Department of Chemistry, Nankai University, Tianjin, 300071, Peop. Rep. China  
SOURCE: Acta Crystallographica, Section C: Crystal Structure Communications (2001), C57(2), 201-202  
CODEN: ACSCEE; ISSN: 0108-2701  
PUBLISHER: Munksgaard International Publishers Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB The crystal structure of the title compound contains two independent mols. with no significant difference in their structures. The pyrazine ring makes dihedral angles of 36.7(2) and 36.5(3)° with the two pyridine rings in one mol., and 43.1(2) and 38.4(1)° in the other. The dihedral angles between the two pyridine rings are 58.2(2) and 56.0(2)°, resp. The favored orientation of the pyridine rings is such that their N atoms face each other. Crystallog. data are given.  
IT 118553-90-5P, 5,6-Bis(2-pyridyl)-2,3-pyrazinedicarbonitrile

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and crystal structure of)

RN 118553-90-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)

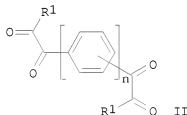
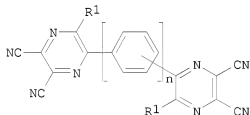


REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 134 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2001:18954 CAPLUS  
DOCUMENT NUMBER: 134:86278  
TITLE: Method for preparation of bis(2,3-dicyanopyrazin-5-yl)benzene derivatives  
INVENTOR(S): Tadokoro, Kaoru; Shoji, Masayuki; Nanba, Michihiko;  
Shimada, Tomoyuki; Tanaka, Chiaki  
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001002661	A	20010109	JP 1999-175234	19990622
PRIORITY APPLN. INFO.:			JP 1999-175234	19990622
OTHER SOURCE(S):			CASREACT 134:86278; MARPAT 134:86278	

GI



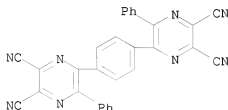
AB The title compds. [I; R1 = H, (un)substituted lower alkyl or aryl; n = 1,2] are prepared by cyclocondensation of di(glyoxalyl)benzenes (II; R1, n = same as above) with diaminomaleonitrile in high yields. These compds. I are useful as electron-transport, charge-generating, optical recording, and photoelec. materials or intermediates thereof (no data). Thus, 0.1 mol 1,4-bisbenzil, 0.2 mol diaminomaleonitrile, and AcOH were refluxed with stirring for 6 h to give, after column chromatog. purification and recrystn. from PhMe, 80% 1,4-bis(2,3-dicyano-5-phenylpyrazin-6-yl)benzene.

IT 160904-13-2P  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material)

use); PREP (Preparation); USES (Uses)  
 (preparation of (dicyanopyrazinyl)benzene derivs. as electron-transport,  
 charge-generating, optical recording, and photoelec. materials by  
 cyclocondensation of di(glyoxalyl)benzenes with diaminomaleonitrile)

RN 160904-13-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,5'-(1,4-phenylene)bis[6-phenyl- (9CI) (CA  
 INDEX NAME)



L14 ANSWER 135 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:2182 CAPLUS

DOCUMENT NUMBER: 134:78627

TITLE: Reaction product, process of producing same,  
 electrophotographic photoconductor using same,  
 electrophotographic apparatus having the  
 photoconductor, and process cartridge for  
 electrophotographic apparatus

INVENTOR(S): Tadokoro, Kaoru; Shoshi, Masayuki; Namba, Michihiko;  
 Shimada, Tomoyuki; Tanaka, Chiaki

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 85 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

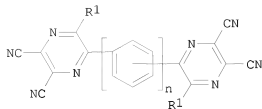
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1063264	A2	20001227	EP 2000-113409	20000623
EP 1063264	A3	20010829		
EP 1063264	B1	20060301		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001329185	A	20011127	JP 2000-187990	20000622
US 6465648	B1	20021015	US 2000-602186	20000622
ES 2255920	T3	20060716	ES 2000-113409	20000623
US 2003013028	A1	20030116	US 2002-62428	20020205
US 6544701	B2	20030408		

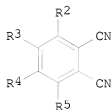
PRIORITY APPLN. INFO.: JP 1999-175213 A 19990622  
 JP 1999-175240 A 19990622  
 JP 1999-260632 A 19990914  
 JP 1999-260633 A 19990914  
 JP 1999-260634 A 19990914  
 JP 2000-70353 A 20000314  
 US 2000-602186 A3 20000622

OTHER SOURCE(S): MARPAT 134:78627

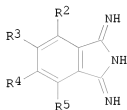
GI



I



II



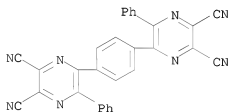
III

AB The invention relates to a novel reaction product, to an electrophotog. photoconductor using such reaction product, to an electrophotog. apparatus using the photoconductor and to a process cartridge for such electrophotog. apparatus. A product obtained by reacting a nitrile compound of the formula (I) with a phthalonitrile compound of the formula (II) or a 1,3-diimino-isoindoline compound of the formula (III) and, if necessary, with a metal or a metal-containing compound: wherein R1-R5 and n are as defined in the specification. The product has charge generating properties and is useful for forming an electrophotog. photoconductor.

IT 160904-13-2D, copper and titanium complexes  
 RL: NUU (Other use, unclassified); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)  
 (photoconductive material for electrophotog. apparatus having photoconductor and process cartridge)

RN 160904-13-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,5'-(1,4-phenylene)bis[6-phenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 136 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:377090 CAPLUS

DOCUMENT NUMBER: 133:36061

TITLE: Electrophotographic photoreceptor containing tetraazaporphyrin

INVENTOR(S): Tadokoro, Kaoru; Shoshi, Masayuki; Nanba, Michihiko; Shimada, Tomoyuki; Tanaka, Chiaki

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 33 pp.  
 CODEN: JKXXAF

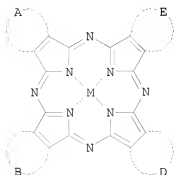
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

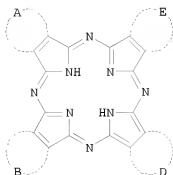


FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000155434	A	20000606	JP 1998-329980	19981119
PRIORITY APPLN. INFO.: OTHER SOURCE(S): GI	MARPAT 133:36061		JP 1998-329980	19981119



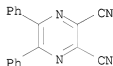
I



II

AB The photoreceptor comprises an elec. conducting support having thereon a photosensitive layer containing a tetraazaporphyrin I or II [A, B, C, D, and/or E = III, IV; r1-6 = H, halo, (un)substituted alkyl, (un)substituted aryl; (un)substituted cycloalkyl, NO2; r1 and R2, and r3-6 may form a ring; M = metal atom, metal oxide, metal hydroxide, metallic halide]. The photoreceptor, showing improved chargeability and high sensitivity, is suitable for high-speed copying machine, laser printer, etc.

IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(electrophotog. photoreceptor containing tetraazaporphyrin from)  
RN 52197-23-6 CAPLUS  
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 137 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2000:375560 CAPLUS  
DOCUMENT NUMBER: 133:105433  
TITLE: Synthesis and investigation of aromatic polyethers bearing acetylenic groups in backbones  
AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Keshtova, S. V.; Belomonina, N. M.; Mikitaev, A. K.; Shchegolikhin, A. N.  
CORPORATE SOURCE: Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 117813, Russia  
SOURCE: Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (1998), 40(3), 397-402  
CODEN: VSSBEE; ISSN: 1023-3091  
PUBLISHER: MAIK Nauka

DOCUMENT TYPE:

Journal

LANGUAGE:

Russian

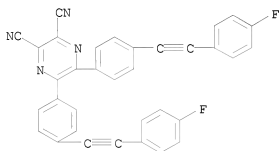
AB New aromatic difluoroarom. compds. containing acetylenic groups were obtained. Reactions of these monomers with various bisphenols under the conditions of nucleophilic substitution yielded aromatic polyethers. The glass transition temperature of the resulting polymers lies in the range of 145-280°C, and the temperature of 10% weight loss measured upon heating in air lies in the range of 410-530°C. These polymers produce cross-linked structures at elevated temps.

IT 194936-26-0P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (monomer; synthesis and investigation of aromatic polyethers bearing acetylenic groups in backbones)

RN 194936-26-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-(9CI) (CA INDEX NAME)



IT 244623-42-5P 244623-47-0P 244623-52-7P

244623-57-2P 244623-61-8P 244623-65-2P

244623-69-6P 244623-73-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (synthesis and investigation of aromatic polyethers bearing acetylenic groups in backbones)

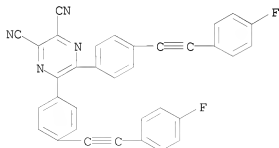
RN 244623-42-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

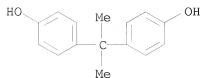
CRN 194936-26-0

CMF C34 H16 F2 N4



CM 2

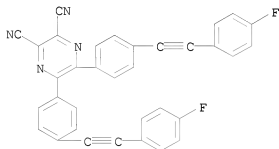
CRN 80-05-7  
CMF C15 H16 O2



RN 244623-47-0 CAPLUS  
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

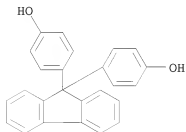
CM 1

CRN 194936-26-0  
CMF C34 H16 F2 N4



CM 2

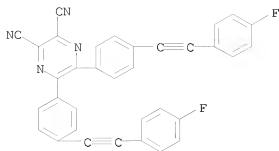
CRN 3236-71-3  
CMF C25 H18 O2



RN 244623-52-7 CAPLUS  
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 3,3-bis(4-hydroxyphenyl)-1(3H)-isobenzofuranone (9CI) (CA INDEX NAME)

CM 1

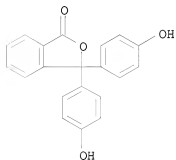
CRN 194936-26-0  
CMF C34 H16 F2 N4



CM 2

CRN 77-09-8

CMF C20 H14 O4



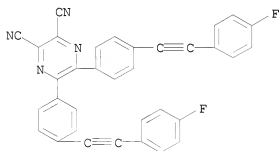
RN 244623-57-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 4,4'-(1-phenylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 194936-26-0

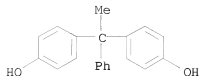
CMF C34 H16 F2 N4



CM 2

CRN 1571-75-1

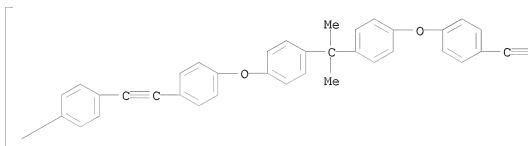
CMF C20 H18 O2



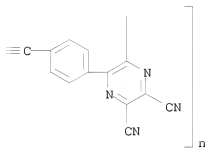
RN 244623-61-8 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A

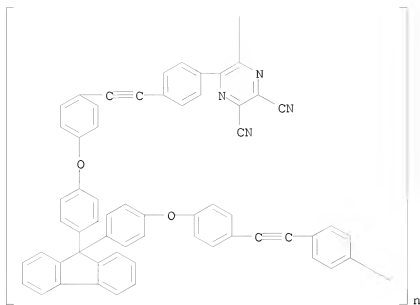


PAGE 1-B



RN 244623-65-2 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 244623-69-6 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

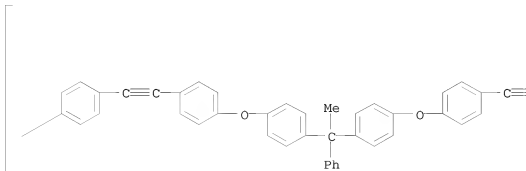
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

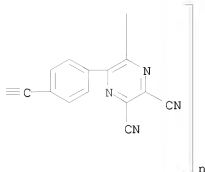
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

RN 244623-73-2 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(1-phenylethylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



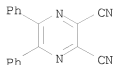


L14 ANSWER 138 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:356856 CAPLUS  
 DOCUMENT NUMBER: 133:5841  
 TITLE: Tetraazaporphyrin mixed derivatives useful for charge carriers of electrophotographic photoreceptors and their manufacture  
 INVENTOR(S): Tadokoro, Kaoru; Shoshi, Masayuki; Nanba, Michihiko; Shimada, Tomoyuki; Tanaka, Chiaki  
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

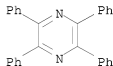
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000144005	A	20000526	JP 1998-326779	19981117
PRIORITY APPLN. INFO.:			JP 1998-326779	19981117

OTHER SOURCE(S): MARPAT 133:5841

AB The derivs. are manufactured by the reaction of a mixture of (A) (optionally substituted) 2,3-dicyanopyrazine compound, (B) (optionally substituted) phthalonitrile compound or/and (C) (optionally substituted) 1,3-diiminoisoindoline derivative with a metal compound. Thus, mixing 2,3-dicyano-5,6-diphenylpyrazine 0.2 with phthalonitrile 0.2 and Cu(I) chloride 0.1 mol in 1000 mL  $\alpha$ -chloronaphthalene, heating at 190-210° for 3 h while stirring and working up gave a porphyrin compound mixture.  
 IT 52197-23-6DP, 2,3-Dicyano-5,6-diphenylpyrazine, mixed porphyrin copper complexes with other dicyano compds.  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (tetraazaporphyrin derivs. useful for charge carriers of electrophotog. photoreceptors and manufacture)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 139 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:187964 CAPLUS  
 DOCUMENT NUMBER: 132:298920  
 TITLE: LC method for the quantitative determination of oxaprozin and its impurities in the bulk drug  
 AUTHOR(S): Reddy, K. V. S. R. K.; Rao, D. S.; Vyas, K.; Reddy, G. O.  
 CORPORATE SOURCE: Department of Analytical R&D, Dr. Reddy's Research Foundation, Miyapur, Hyderabad, India  
 SOURCE: Journal of Pharmaceutical and Biomedical Analysis (2000), 22(4), 651-659  
 CODEN: JPBADA; ISSN: 0731-7085  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB A reversed-phase linear gradient liquid chromatog. method was developed for the separation and quant. determination of the 7 known process related impurities and one degraded product of oxaprozin in the bulk drug material. An Inertsil-ODS 3V (150x4.6 mm), 5-µm column was operated with a phosphate buffer-MeCN gradient. Detection was carried out on a UV detector at 254 nm. This method was accurate and sensitive. The limits of detection and limits of quantification of impurities were in the order of 5-60 and 16-200 ng, resp. In addition to its ruggedness and robustness, this method offers identification of all 8 impurities in a single run.  
 IT 642-04-6, Tetra[phenylpyrazine  
 RL: ANT (Analyte); ANSI (Analytical study)  
 (HPLC for determination of oxaprozin and its impurities)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



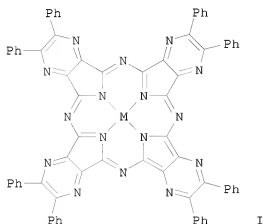
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 140 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:89346 CAPLUS  
 DOCUMENT NUMBER: 132:142086  
 TITLE: Tetrapyrrozinoporphyrazine derivatives with new crystal type and electrophotographic photoreceptor using them  
 INVENTOR(S): Tadokoro, Kaoru; Shoshi, Masayuki; Nanba, Michihiko  
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese



FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000038390	A	20000208	JP 1998-209897	19980724
PRIORITY APPLN. INFO.:			JP 1998-209897	19980724
OTHER SOURCE(S):	MARPAT	132:142086		
GI				

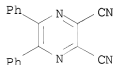


AB The tetrapyrazinoporphyrazine derivs. I (M = H, atomic groups or compds. capable of coordination linkage with tetrapyrazinoporphyrazine) shows diffraction peaks at Bragg's angle ( $2\theta \pm 0.3^\circ$ ) 4.6, 7.1, 8.0, and/or  $24.0^\circ$  in its x-ray diffraction spectrum from CuK $\alpha$  line. The electrophotog. photoreceptor has a photosensitive layer containing  $\geq 1$  I on an elec. conductive support. The photoreceptor shows high sensitivity.

IT 52197-23-6P, 2,3-Dicyano-5,6-diphenylpyrazine  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction of; electrophotog. photoreceptor containing octaphenyltetrapyrazinoporphyrazine derivs. as charge-generating agent with high sensitivity)

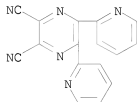
RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)

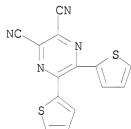


L14 ANSWER 141 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2000:73778 CAPLUS  
DOCUMENT NUMBER: 132:202268  
TITLE: Synthesis of octa(2-heteroaryl) azaphthalocyanines  
AUTHOR(S): Morkved, Eva H.; Ossletten, Hege; Kjosén, Helge; Bjørlo, Olav  
CORPORATE SOURCE: Dep. Chem., Norwegian Univ. Sci. Technology,

SOURCE: Trondheim, Norway  
 Journal fuer Praktische Chemie (Weinheim, Germany)  
 (2000), 342(1), 83-86  
 CODEN: JPCHF4; ISSN: 1436-9966  
 PUBLISHER: Wiley-VCH Verlag GmbH  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Magnesium, copper(II) and nickel(II) complexes of octasubstituted azaphthalocyanines (3-5) were prepared from di-fur-2-yl, di-thien-2-yl and di-pyrid-2-yl pyrazine-2,3-dicarbonitriles (2). 2 Were prepared in good yields from condensations of diaminomaleonitrile and the diketones 2,2'-furyl, 2,2'-thenil and 2,2'-pyridil. AzaPcs 3-5 give green pyridine solns. with Q-bands at 650-670 nm and  $\epsilon$ -values of 60,000-190,000.  
 IT 118553-90-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (for preparation of magnesium and copper(II) octa(heteroaryl)azaphthalocyaninato complexes)  
 RN 118553-90-5 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



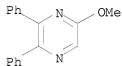
IT 219581-08-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (for preparation of magnesium octa(heteroaryl)azaphthalocyaninato complex)  
 RN 219581-08-5 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-thienyl- (CA INDEX NAME)



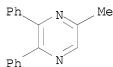
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 142 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN  
 ACCESSION NUMBER: 1999:670507 CAPLUS  
 DOCUMENT NUMBER: 132:22680  
 TITLE: Measurement and Prediction of Hydrophobicity Parameters for Highly Lipophilic Compounds: Application of the HPLC Column-Switching Technique to Measurement of log P of Diarylpyrazines  
 AUTHOR(S): Yamagami, Chisako; Araki, Kozue; Ohnishi, Kyoko; Hanasato, Kaoru; Inaba, Haruko; Aono, Masahiro; Ohta,

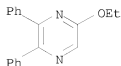
Akihiro  
 CORPORATE SOURCE: Kobe Pharmaceutical University, Higashinada Kobe,  
 658-8558, Japan  
 SOURCE: Journal of Pharmaceutical Sciences (1999), 88(12),  
 1299-1304  
 CODEN: JPMSAE; ISSN: 0022-3549  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB In the preparatory stage of structure-activity relation (QSAR) studies of  
 anti-platelet aggregant pyrazine derivs., log P values (P: 1-octanol/H<sub>2</sub>O  
 partition coefficient) of diarylpyrazines were measured by a newly developed  
 HPLC column-switching technique. The system consists of 2 processes: (1)  
 adsorption of the sample at the top end of a short precolumn, and then (2)  
 quantifying the enriched analyte by a conventional anal. column. By using  
 the log P values thus obtained, the correction factor for the steric  
 hindrance caused by the vicinal di-Ph groups was estimated. The log k values  
 (k; retention factor) were also measured with MeOH-buffer (pH 7.4) eluents  
 and related to log P. The eluent of 50% MeOH content (M50) gave a good  
 linear relation over a wide range of log P (-0.3 < log P < 5.2), indicating  
 that log kM50 parameter is useful for predicting the log P value.  
 IT 34121-90-9 78605-07-9 104369-45-1  
 106615-27-4 106615-30-9 106615-34-3  
 106615-37-6 122956-27-8 122956-29-0  
 122956-30-3 147593-54-2 147593-55-3  
 199783-04-5 199783-08-9 199783-12-5  
 RL: PRP (Properties)  
 (measurement and prediction of hydrophobicity parameters for highly  
 lipophilic compds. from HPLC column-switching technique measurement of  
 log P of diarylpyrazines)  
 RN 34121-90-9 CAPLUS  
 CN Pyrazine, 5-methoxy-2,3-diphenyl- (8CI, 9CI) (CA INDEX NAME)



RN 78605-07-9 CAPLUS  
 CN Pyrazine, 5-methyl-2,3-diphenyl- (9CI) (CA INDEX NAME)

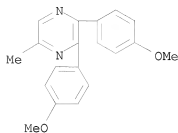


RN 104369-45-1 CAPLUS  
 CN Pyrazine, 5-ethoxy-2,3-diphenyl- (CA INDEX NAME)



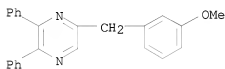
RN 106615-27-4 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-methyl- (CA INDEX NAME)



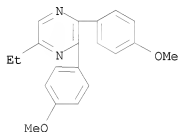
RN 106615-30-9 CAPLUS

CN Pyrazine, 5-[(3-methoxyphenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



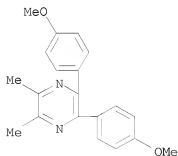
RN 106615-34-3 CAPLUS

CN Pyrazine, 5-ethyl-2,3-bis(4-methoxyphenyl)- (CA INDEX NAME)



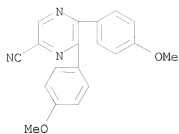
RN 106615-37-6 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-dimethyl- (CA INDEX NAME)



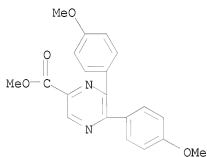
RN 122956-27-8 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



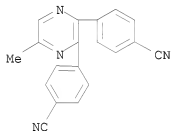
RN 122956-29-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-methoxyphenyl)-, methyl ester (9CI)  
(CA INDEX NAME)



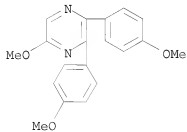
RN 122956-30-3 CAPLUS

CN Benzonitrile, 4,4'-(5-methyl-2,3-pyrazinediyl)bis- (CA INDEX NAME)



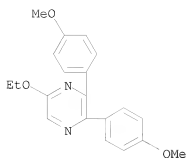
RN 147593-54-2 CAPLUS

CN Pyrazine, 5-methoxy-2,3-bis(4-methoxyphenyl)- (CA INDEX NAME)

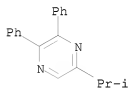


RN 147593-55-3 CAPLUS

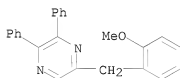
CN Pyrazine, 5-ethoxy-2,3-bis(4-methoxyphenyl)- (CA INDEX NAME)



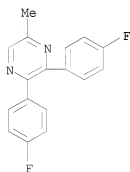
RN 199783-04-5 CAPLUS  
 CN Pyrazine, 5-(1-methylethyl)-2,3-diphenyl- (CA INDEX NAME)



RN 199783-08-9 CAPLUS  
 CN Pyrazine, 5-[(2-methoxyphenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



RN 199783-12-5 CAPLUS  
 CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-methyl- (CA INDEX NAME)



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 143 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1999:645500 CAPLUS  
 DOCUMENT NUMBER: 132:17394

TITLE: Discotic liquid crystals of transition metal complexes. Part 26. Supramolecular structures of long-chain-substituted octaphenyltetrapyrzazino porphyrane zine derivatives

AUTHOR(S): Ohta, Kazuchika; Azumane, Satoru; Kawahara, Wataru; Kobayashi, Nagao; Yamamoto, Iwao

CORPORATE SOURCE: Faculty of Textile Science and Technology, Department of Functional Polymer Science, Shinshu University, Ueda, 386-8567, Japan

SOURCE: Journal of Materials Chemistry (1999), 9(10), 2313-2320  
CODEN: JMACEP; ISSN: 0959-9428

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

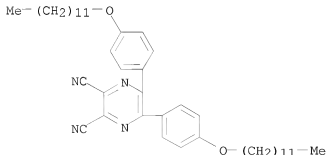
AB Ten novel columnar liquid crystals, [octakis(4-alkoxyphenyl)tetrapyrzazino porphyrinato]metal(II) (abbreviated as (CnO)8-M; n = 10, 12; M = Cu, Ni) and [octakis(3,4-dialkoxyphenyl)tetrapyrzazino porphyrinato]metal(II) (abbreviated as (CnO)16-M; n = 8, 10, 12; M = Cu, Ni), were synthesized and characterized. The mesophase structures of (CnO)8-M are very sensitive to the central metal and closely related to the aggregate structures in the solution. The (CnO)16-M derivs. exhibit a Dhd mesophase at lower temps. and a Drd (C2/m) phase at higher temps. Thus, the mesophase with higher symmetry appears at lower temps. for these (CnO)16-M derivs. This is quite opposite to the general tendency for the higher symmetry mesophase to appear at higher temps. To further clarify the structures of both the mesophases and the aggregate in solns., the electronic and magnetic CD (MCD) spectra were measured. The Q band of (CnO)16-M in n-hexane showed a wide Davydov splitting. such a wide splitting of the Q band can be attributed to the formation of dimers. The dimerization was confirmed by vapor pressure osmometric (VPO) measurements in n-hexane solution. Also, the spectrum of the thin film in the mesophase in the absence of solvent at room temperature was similar to that of the n-hexane solution

From these electronic absorption spectra, MCD spectra, VPO measurements and temperature-dependent x-ray diffraction studies, it was clarified for (CnO)16-M that the dimer structure in hexane solution is closely related to those in the thermotropic mesophases.

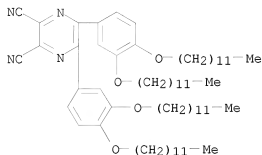
IT 159254-45-2P, 2,3-Dicyano-5,6-bis(4-dodecyloxyphenyl)pyrazine  
159254-47-4P 251480-26-9P, 2,3-Dicyano-5,6-bis(4-dodecyloxyphenyl)pyrazine 251480-27-0P 251480-28-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction with diazabicycloundecene and copper chloride)

RN 159254-45-2 CAPLUS

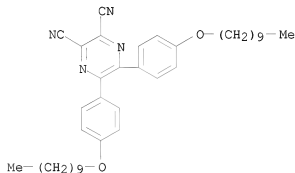
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dodecyloxy)phenyl]- (CA INDEX NAME)



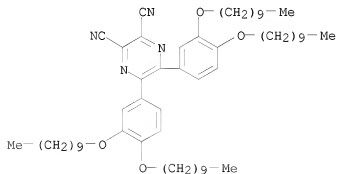
RN 159254-47-4 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(dodecyloxy)phenyl]- (CA INDEX NAME)



RN 251480-26-9 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(decyloxy)phenyl]- (CA INDEX NAME)

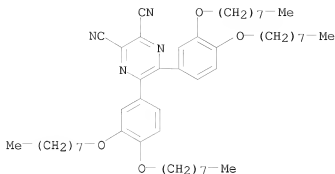


RN 251480-27-0 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(decyloxy)phenyl]- (CA INDEX NAME)



RN 251480-28-1 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(octyloxy)phenyl]- (CA INDEX NAME)





REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 144 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN

ACCESSION NUMBER: 1999:497409 CAPLUS

DOCUMENT NUMBER: 131:257988

TITLE: Preparation and properties of aromatic polyethers containing acetylene groups in the backbone

AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Sarkisyan, G. B.; Zuo, M.; Takeichi, T.

CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 117813, Russia

SOURCE: Kobunshi Ronbunshu (1999), 56(7), 434-439

CODEN: KBRBA3; ISSN: 0386-2186

PUBLISHER: Kobunshi Gakkai

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Novel difluoroarom. compds. containing acetylene groups were prepared. The reactivity of the monomers in nucleophilic substitution was evaluated from the pos. charges on the carbon of C-F bonds calculated using the semiempirical PM3 method. There is a good correlation between the charge calculated and the chemical shifts in the <sup>19</sup>F NMR spectra. Reactions of the monomers with various bisphenols under the nucleophilic substitution reaction conditions gave aromatic polyethers. The glass transition temps. of the polyethers were in the range of 145-280°, and the temperature at 10% weight loss were in the range of 410-545°C in the air. DSC revealed that acetylene groups in the polyether backbone reacted to crosslink at ca. 350° to give solvent resistant polymers.

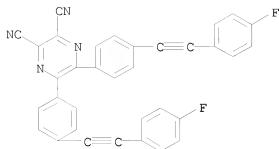
IT 194936-26-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(monomer; preparation and properties of aromatic polyethers containing acetylene groups in backbone)

RN 194936-26-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-(9CI) (CA INDEX NAME)



IT 244623-42-5P 244623-47-0P 244623-52-7P

244623-57-2P 244623-61-8P 244623-65-2P

244623-69-6P 244623-73-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation and properties of aromatic polyethers containing acetylene groups in

backbone)

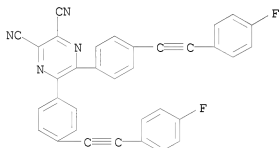
RN 244623-42-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 194936-26-0

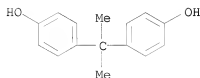
CMF C34 H16 F2 N4



CM 2

CRN 80-05-7

CMF C15 H16 O2



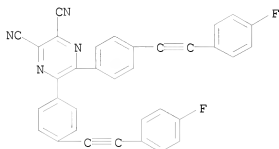
RN 244623-47-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 194936-26-0

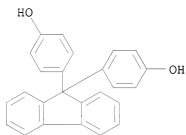
CMF C34 H16 F2 N4



CM 2

CRN 3236-71-3

CMF C25 H18 O2



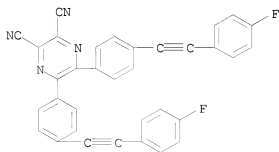
RN 244623-52-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 3,3-bis(4-hydroxyphenyl)-1(3H)-isobenzofuranone (9CI) (CA INDEX NAME)

CM 1

CRN 194936-26-0

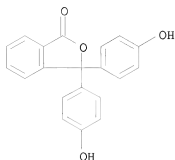
CMF C34 H16 F2 N4



CM 2

CRN 77-09-8

CMF C20 H14 O4



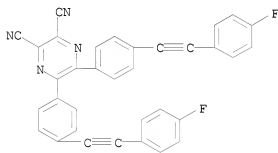
RN 244623-57-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 4,4'-(1-phenylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 194936-26-0

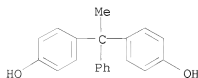
CMF C34 H16 F2 N4



CM 2

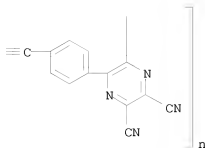
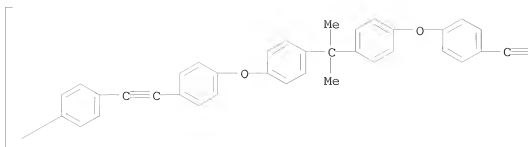
CRN 1571-75-1

CMF C20 H18 O2



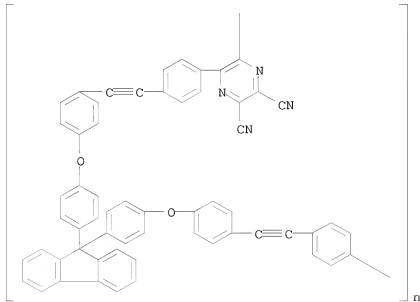
RN 244623-61-8 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 244623-65-2 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 244623-69-6 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

NAME)

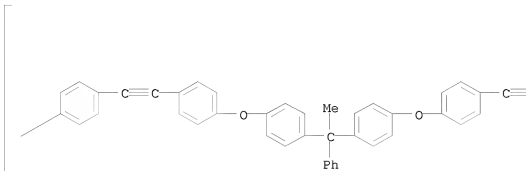
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

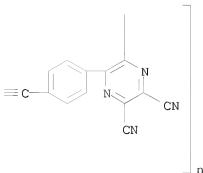
RN 244623-73-2 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(1-phenylethylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



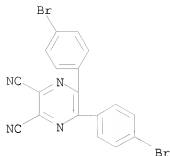
IT 101579-12-8

RL: RCT (Reactant); RACT (Reactant or reagent)

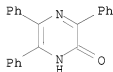
(starting material; preparation and properties of aromatic polyethers containing acetylene groups in backbone)

RN 101579-12-8 CAPLUS

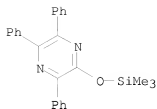
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



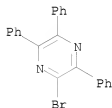
L14 ANSWER 145 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1999:457827 CAPLUS  
 DOCUMENT NUMBER: 131:214259  
 TITLE: Studies on pyrazines. 35. An improved synthesis of bromopyrazines from hydroxypyrazines  
 AUTHOR(S): Sato, Nobuhiro; Narita, Nobuhiko  
 CORPORATE SOURCE: Department of Chemistry, Yokohama City University, Yokohama, 236-0027, Japan  
 SOURCE: Journal of Heterocyclic Chemistry (1999), 36(3), 783-786  
 CODEN: JHTCAD; ISSN: 0022-152X  
 PUBLISHER: HeteroCorporation  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 131:214259  
 AB The synthesis of bromopyrazines from hydroxypyrazines was successfully effected by the procedure via trimethylsilyloxypyrazines, the sequence of which proceeds under mild conditions and does not require the isolation of intermediate.  
 IT 104369-41-7, 2-Hydroxy-3,5,6-triphenylpyrazine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (synthesis of bromopyrazines from hydroxypyrazines)  
 RN 104369-41-7 CAPLUS  
 CN 2(1H)-Pyrazinone, 3,5,6-triphenyl- (CA INDEX NAME)



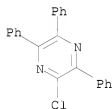
IT 243472-86-8P, 2-Trimethylsiloxy-3,5,6-triphenylpyrazine  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis of bromopyrazines from hydroxypyrazines)  
 RN 243472-86-8 CAPLUS  
 CN Pyrazine, triphenyl[(trimethylsilyl)oxy]- (9CI) (CA INDEX NAME)



IT 243472-73-3P, 2-Bromo-3,5,6-triphenylpyrazine 243472-78-8P  
 , 2-Chloro-3,5,6-triphenylpyrazine  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis of bromopyrazines from hydroxypyrazines)  
 RN 243472-73-3 CAPLUS  
 CN Pyrazine, bromotriphenyl- (9CI) (CA INDEX NAME)



RN 243472-78-8 CAPLUS  
 CN Pyrazine, chlorotriphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 146 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN  
 ACCESSION NUMBER: 1999:437827 CAPLUS  
 DOCUMENT NUMBER: 131:164543  
 TITLE: Tetrakis(selenodiazole)porphyrazines. 1:  
 tetrakis(selenodiazole)porphyrazine and its Mg(II) and  
 Cu(II) derivatives. Evidence for their conversion to  
 tetrakis(pyrazino)porphyrazines through  
 octaaminoporphyrazines  
 AUTHOR(S): Bauer, Elvira M.; Ercolani, Claudio; Galli, Paola;  
 Popkova, Irina A.; Stuzhin, Pavel A.  
 CORPORATE SOURCE: Dipartimento di Chimica, Universita degli Studi di  
 Roma "La Sapienza", Rome, I-00185, Italy  
 SOURCE: Journal of Porphyrins and Phthalocyanines (1999),  
 3(5), 371-379  
 CODEN: JPPHFZ; ISSN: 1088-4246  
 PUBLISHER: John Wiley & Sons Ltd.

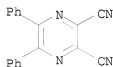


DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The new phthalocyanine-like macrocycle tetrakis(selenodiazole)porphyrazine, TSeDPzH<sub>2</sub>, and its Mg(II) and Cu(II) complexes were prepared and their general, spectroscopic (IR, UV-visible), and magnetic properties studied. The peripheral selenodiazole rings of the TSeDPz skeleton can be opened by the action of H<sub>2</sub>S, with release of the Se atoms and formation of a new macrocycle, octaaminoporphyrazine, which is easily converted into tetrakis(pyrazino)porphyrazine derivs.

IT 52197-23-6P, 2,3-Dicyano-5,6-diphenylpyrazine  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and magnesium template cyclotetramerization)

RN 52197-23-6 CAPLUS  
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 147 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:434177 CAPLUS

DOCUMENT NUMBER: 131:81022

TITLE: Dimorphism of 2,3,5,6-tetraphenylpyrazine

AUTHOR(S): Bartnik, Romuald; Faure, Rene; Gebicki, Krzysztof

CORPORATE SOURCE: Department of Organic and Applied Chemistry,  
University of Lodz, Lodz, 90-136, Pol.

SOURCE: Acta Crystallographica, Section C: Crystal Structure  
Communications (1999), C55(6), 1034-1037  
CODEN: ACSCEE; ISSN: 0108-2701

PUBLISHER: Munksgaard International Publishers Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two forms of 2, 3, 5, 6-tetraphenylpyrazine (TPP), C<sub>28</sub>H<sub>20</sub>N<sub>2</sub>, were crystallized. Crystallog. data are given. The 1st variety ( $\alpha$ ) is primitive monoclinic (P2<sub>1</sub>/c), in which the TPP mol. is centrosym. The 2nd variety ( $\beta$ ) is C-face-centered monoclinic (C2/c) with two symmetry-independent mols. having binary axis symmetry, where in one of the mols., the binary axis passes through the two N atoms of the pyrazine ring, while in the 2nd mol., the binary axis passes through the midpoints of the two C-C bonds of the pyrazine ring. In these two compds., the Ph rings are differently disposed, showing a wing-like conformation in the  $\alpha$  form and a propeller-like conformation for the two mols. in the  $\beta$  form. The rotations of the Ph rings, given by the dihedral angles between the pyrazine rings and the Ph rings, are in the range 37.56(8)-49.72(8)°.

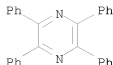
IT 642-04-6, 2,3,5,6-Tetraphenylpyrazine

RL: PRP (Properties)

(crystal structure and dimorphism of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

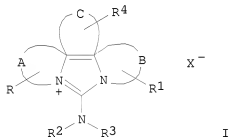


REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 148 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1999:130421 CAPLUS  
 DOCUMENT NUMBER: 130:196653  
 TITLE: Imidazolium cations, processes for their preparation, and uses therefor  
 INVENTOR(S): Donovan, Robert J.; Morgan, Robert J.  
 PATENT ASSIGNEE(S): The Rockefeller University, USA  
 SOURCE: U.S., 33 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5874587	A	19990223	US 1996-673687	19960625
US 5969150	A	19991019	US 1998-124546	19980729
US 6087510	A	20000711	US 1999-247471	19990208
US 6187928	B1	20010213	US 2000-520202	20000307
PRIORITY APPLN. INFO.:			US 1996-673687	A2 19960625
OTHER SOURCE(S):		CASREACT 130:196653; MARPAT 130:196653		

GI



AB Imidazolium compds. I [A represents the atomic group necessary to form a heteroarom. ring, which may be optionally substituted by one or more R substituents selected from the group consisting of aryl, heteroaryl, lower alkyl, hydroxy, halide, or carboxy substituents; B is an optional substituent which represents the atomic group necessary to form a heteroarom. ring or a double or triple carbon-nitrogen bond, which may optionally be substituted by one or more R1 substituents selected from the group consisting of aryl, heteroaryl, lower alkyl, hydroxy, halide, or carboxy substituents; C is an optional substituent which represents the atomic group necessary to form an aromatic or heteroarom. ring, which may optionally be substituted by one or more R4 substituents selected from the group consisting of aryl, heteroaryl, lower alkyl, hydroxy, halide, or carboxy substituents; R2 and R3 are each independently a lower alkyl or aryl

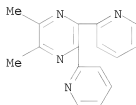
group, or together with the nitrogen atom to which they are attached, form a heterocyclic ring having from 5 to 7 members, which may optionally contain a sulfur, oxygen, silicon, selenium or an addnl. nitrogen atom; X is an anion], useful in a variety of industrial and medical applications (no data) were prepared E.g. treating 2-(2-pyridinyl)-4-quinolinecarboxylic acid with SOCl<sub>2</sub>, then with 4-morpholinecarboxaldehyde, gave fluorescent 5-carboxy-12-(4-morpholinyl)pyrido[1',2':3,4]imidazo[1,5-a]quinolin-11-ium perchlorate.

IT 89684-66-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclization; preparation and fluorescence of imidazolium compds.)

RN 89684-66-2 CAPLUS

CN Pyrazine, 2,3-dimethyl-5,6-di-2-pyridinyl- (9CI) (CA INDEX NAME)



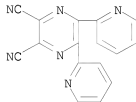
IT 118553-90-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(cyclization; preparation and fluorescence of imidazolium compds.)

RN 118553-90-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 149 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:77548 CAPLUS

DOCUMENT NUMBER: 130:153668

TITLE: Preparation of 2-(1,2,3,4-tetrahydroxybutyl)pyrazines as hypoglycemics

INVENTOR(S): Bashiardes, Georges; Carry, Jean-Christophe; Evers, Michel; Filoche, Bruno; Mignani, Serge

PATENT ASSIGNEE(S): Rhone-Poulenc Rorer S.A., Fr.

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

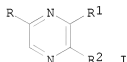
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

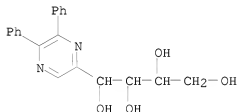
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9903838	A1	19990128	WO 1998-FR1539	19980715

W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, HR, HU, ID, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 FR 2766180 A1 19990122 FR 1997-9055 19970717  
 AU 9887358 A 19990210 AU 1998-87358 19980715  
 ZA 9806328 A 19990202 ZA 1998-6328 19980716  
 PRIORITY APPLN. INFO.: FR 1997-9055 A 19970717  
 WO 1998-FR1539 W 19980715

OTHER SOURCE(S): MARPAT 130:153668  
 GI



AB Title compds. [R = [CH(OH)]3CH2OH] (I; R1,R2 = H, alkyl, Ph, etc.) were prepared. Thus, 4-oxido-I (R1 = R2 = H) was reduced to give I (R1 = R2 = H).  
 IT 220155-16-8P  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of 2-(1,2,3,4-tetrahydroxybutyl)pyrazines as hypoglycemics)  
 RN 220155-16-8 CAPLUS  
 CN 1,2,3,4-Butanetetrol, 1-(5,6-diphenylpyrazinyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 150 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN  
 ACCESSION NUMBER: 1998:645937 CAPLUS  
 DOCUMENT NUMBER: 129:316178  
 TITLE: Pyrolysis and photolysis of 1-acylamino-4,5-diaryl-1,2,3-triazoles: generation and thermal transformations of 4,5-diaryl-1,2,3-triazolyl radicals  
 AUTHOR(S): Hadjiantoniou-Maroulis, C. P.; Charalambopoulos, A. Ph.; Maroulis, A. J.  
 CORPORATE SOURCE: Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, GR-540 06, Greece  
 SOURCE: Journal of Heterocyclic Chemistry (1998), 35(4), 891-894  
 PUBLISHER: CODEN: JHTCAD; ISSN: 0022-152X  
 HeteroCorporation

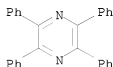
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 129:316178

AB The pyrolysis of 1-arylamino-4,5-diphenyl-1,2,3-triazoles yields, presumably via the 4,5-diphenyl-1,2,3-triazolyl radical, 2,3-diphenyl-2H-azirine and 2-aryl-4,5-diphenylimidazoles as the major products. Upon irradiation 1-benzoylamino-4,5-diphenyl-1,2,3-triazole gives 4,5-diphenyl-1(2)H-1,2,3-triazole via the 1,2,3-triazolyl radical, together with benzamide and 1,2-dibenzoylhydrazine. The latter products result from the benzoylamino radical by hydrogen atom abstraction and dimerization resp.

IT 642-04-6, Tetraphenylpyrazine  
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)  
(pyrolysis and photolysis of 1-arylamino-4,5-diaryl-1,2,3-triazoles)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

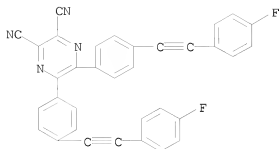
L14 ANSWER 151 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN  
ACCESSION NUMBER: 1998:440027 CAPLUS  
DOCUMENT NUMBER: 129:122882  
TITLE: Evaluation of the reactivity of new activated difluoroaromatic compounds  
AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Keshtova, S. V.  
CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 117813, Russia  
SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (1998), 47(4), 602-603  
CODEN: RCBUEY; ISSN: 1066-5285  
PUBLISHER: Consultants Bureau  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB To evaluate the reactivity of new difluoroarom. compds. in nucleophilic substitution, the pos. charges on carbon atoms of C-F bonds were calculated using the quantum-chemical semiempirical PM3 method. A correlation between the charges calculated and the chemical shifts in the <sup>19</sup>F NMR spectra was established.

IT 194936-26-0  
RL: PRP (Properties)  
(reactivity of)

RN 194936-26-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(4-fluorophenyl)ethynyl]phenyl]- (9CI) (CA INDEX NAME)

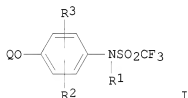


REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 152 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1998:38682 CAPLUS  
 DOCUMENT NUMBER: 128:167414  
 TITLE: Preparation of thiazolyloxyphenylmethanesulfonamides as herbicides  
 INVENTOR(S): Sato, Kazuo; Kudo, Noriaki; Honma, Toyokuni; Isarai, Kiyoshi; Kadotani, Junji  
 PATENT ASSIGNEE(S): Sankyo Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10007657	A	19980113	JP 1996-158177	19960619
PRIORITY APPLN. INFO.: OTHER SOURCE(S):			JP 1996-158177	19960619

GI MARPAT 128:167414



AB Sulfonamides I (R1 = H, C2-6 alkanoyl, benzoyl; R2, R3 = H, halo, NO2, cyano, (substituted) lower alkyl, (substituted) lower alkoxy, etc.; R2R3 may form Ph or naphthalene; Q = (substituted) pyrazinyl, (substituted) 4-pyrimidinyl, (substituted) oxazolyl, (substituted) thiazolyl, (substituted) quinoxalyl, (substituted) quinazolyl, etc.; if Q = thiazolyl and R2 = R3, then R2 = R3 ≠ H) are prepared 2-(4-Amino-3-methoxycarbonylphenoxy)-4-chloro-5-difluoromethylthiazole was amidated with F3CSO3H in the presence of Et3N in CH2Cl2 under ice-cooling for 30 min, decomposed with NaOH in THF-H2O at room temperature for 1 h to give 86% I

(R1 = H, R2 = 2-CO2Me, R3 = H, Q = 4-chloro-5-difluoromethyl-2-thiazolyl)  
 (II). II at 5 g/a preemergence controlled 91-100% Echinochloa oryzicola

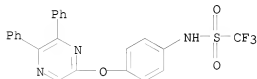
and broadleaf weeds, 71-90% *Scirpus juncoides*, and 31-50% *Cyperus serotinus* growth without damaging rice plants.

IT 202752-40-7 202752-41-8 202752-42-9  
202752-55-4 202752-56-5 202752-57-6  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(preparation of phenylmethanesulfonamides as herbicides)

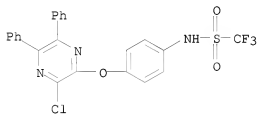
RN 202752-40-7 CAPLUS

CN Methanesulfonamide, N-[4-[(5,6-diphenylpyrazinyl)oxy]phenyl]-1,1,1-trifluoro- (9CI) (CA INDEX NAME)



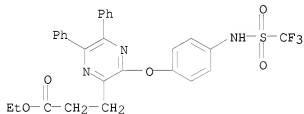
RN 202752-41-8 CAPLUS

CN Methanesulfonamide, N-[4-[(3-chloro-5,6-diphenylpyrazinyl)oxy]phenyl]-1,1,1-trifluoro- (9CI) (CA INDEX NAME)



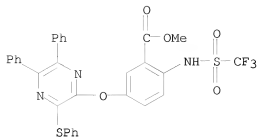
RN 202752-42-9 CAPLUS

CN Pyrazinepropanoic acid, 5,6-diphenyl-3-[4-[(trifluoromethyl)sulfonyl]amino]phenoxy]-, ethyl ester (9CI) (CA INDEX NAME)



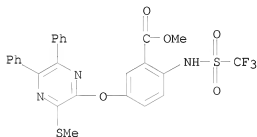
RN 202752-55-4 CAPLUS

CN Benzoic acid, 5-[5,6-diphenyl-3-(phenylthio)pyrazinyl]oxy]-2-[[trifluoromethyl)sulfonyl]amino]-, methyl ester (9CI) (CA INDEX NAME)



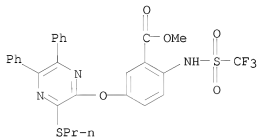
RN 202752-56-5 CAPLUS

CN Benzoic acid, 5-[[3-(methylthio)-5,6-diphenylpyrazinyl]oxy]-2-[[trifluoromethyl)sulfonyl]amino]-, methyl ester (9CI) (CA INDEX NAME)



RN 202752-57-6 CAPLUS

CN Benzoic acid, 5-[[5,6-diphenyl-3-(propylthio)pyrazinyl]oxy]-2-[[trifluoromethyl)sulfonyl]amino]-, methyl ester (9CI) (CA INDEX NAME)



L14 ANSWER 153 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:749366 CAPLUS

DOCUMENT NUMBER: 128:48077

TITLE: Synthesis of pyrazinoporphyrazine derivatives functionalized with tetrathiafulvalene (TTF) units: x-ray crystal structures of two related TTF cyclophanes and two bis(1,3-dithiole-2-thione) intermediates

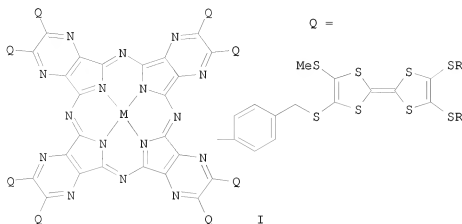
AUTHOR(S): Wang, Changsheng; Bryce, Martin R.; Batsanov, Andrei S.; Howard, Judith A. K.

CORPORATE SOURCE: Department of Chemistry, University of Durham, Durham, DH1 3LE, UK

SOURCE: Chemistry--A European Journal (1997), 3(10), 1679-1690  
CODEN: CEUJED; ISSN: 0947-6539



PUBLISHER:	Wiley-VCH Verlag GmbH
DOCUMENT TYPE:	Journal
LANGUAGE:	English
GI	



AB The pyrazinoporphyrazine system (I) (M = 2H, Zn, Cu; R = hexyl) has been synthesized by tetramerization of 2,3-dicyanopyrazine monomer unit. The structure of I has been established by <sup>1</sup>H NMR spectroscopy, UV/Vis spectrophotometry, MALDI-TOF mass spectrometry, cyclic voltammetry and differential pulse voltammetry. The electrochem. redox behavior of I is strongly solvent dependent. The expected two-stage oxidation of the tetrathiafulvalene (TTF) units of I was observed in a range of solvents; in addition, oxidation and reduction of the pyrazinoporphyrazine core of the metal-free derivative was detected in benzonitrile. On excitation of I in the Q-band region no fluorescence was observed, which is presumably the consequence of intramol. charge transfer between the TTF moieties and the excited state of the central porphyrazine. Mol. modeling studies on I (M = 2H, Zn) are reported. During the course of this work, novel TTF macrocycles were synthesized; their X-ray crystal structures reveal severely bent TTF units, the conformations of which are discussed in detail. The X-ray crystal structures of the bis(1,3-dithiole) systems have also been determined

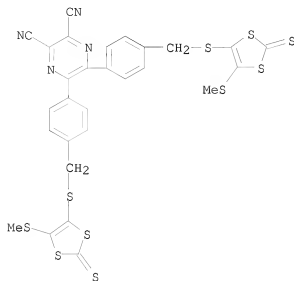
IT 199734-79-7P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis of pyrazinoporphyrazine derivs. functionalized with tetrathiafulvalene (TTF) and x-ray crystal structures of two related TTF cyclophanes and two bis(1,3-dithiole-2-thione) intermediates)

RN 199734-79-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[[[2-[4,5-bis(hexylthio)-1,3-dithiol-2-ylidene]-5-(methylthio)-1,3-dithiol-4-yl]thio]methyl]phenyl]-2-thione]methylphenyl]- (CA INDEX NAME)

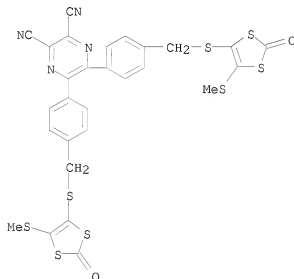


dithiol-4-yl]thio]methyl]phenyl]- (CA INDEX NAME)



RN 199734-78-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[[[5-(methylthio)-2-oxo-1,3-dithiol-4-yl]thio]methyl]phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 88 THERE ARE 88 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 154 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:706910 CAPLUS

DOCUMENT NUMBER: 128:30196

TITLE: Anti-Platelet aggregation activity of some pyrazines  
 AUTHOR(S): Ohta, Akihiro; Takahashi, Hiromitsu; Miyata, Naomi;  
 Hirono, Hiroyuki; Nishio, Toyotaka; Uchino, Etsuo;  
 Yamada, Kenji; Aoyagi, Yutaka; Suwabe, Yasushi;

CORPORATE SOURCE: Fujitake, Masayuki; Suzuki, Takahiro; Okamoto, Kazuo  
Tokyo University of Pharmacy and Life Science,  
Hachioji, 192-03, Japan  
SOURCE: Biological & Pharmaceutical Bulletin (1997), 20(10),  
1076-1081  
CODEN: BPBLEO; ISSN: 0918-6158  
PUBLISHER: Pharmaceutical Society of Japan  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB This report describes the anti-platelet aggregation activity of 48  
pyrazines. Among alkyl- and arylpyrazines tested, 2,3-diphenylpyrazines  
showed the strongest anti-platelet aggregation activity. Then, various  
substituents were introduced into the Ph groups, and the  
2,3-bis(p-methoxyphenyl)pyrazine derivs. were consequently found to  
possess considerably strong inhibitory activity.

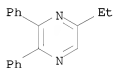
IT 36932-95-3P 66042-94-2P 78605-07-9P  
106615-25-2P 106615-27-4P 106615-28-5P  
106615-29-6P 106615-30-9P 106615-31-0P  
106615-34-3P 106615-35-4P 106615-37-6P  
122956-21-2P 122956-22-3P 122956-23-4P  
122956-24-5P 122956-25-6P 122956-27-8P  
122956-28-9P 122956-29-0P 199783-04-5P  
199783-05-6P 199783-06-7P 199783-07-8P  
199783-08-9P 199783-09-0P 199783-10-3P  
199783-11-4P 199783-12-5P 199783-13-6P  
199783-14-7P 199783-15-8P 199783-16-9P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU  
(Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
(Uses)

(antiplatelet aggregation activity of pyrazines)

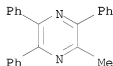
RN 36932-95-3 CAPLUS

CN Pyrazine, 5-ethyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



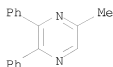
RN 66042-94-2 CAPLUS

CN Pyrazine, methyltriphenyl- (9CI) (CA INDEX NAME)



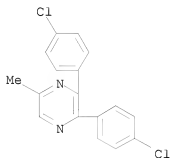
RN 78605-07-9 CAPLUS

CN Pyrazine, 5-methyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



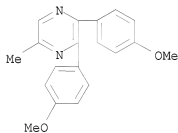
RN 106615-25-2 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-methyl- (CA INDEX NAME)



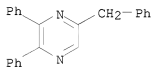
RN 106615-27-4 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-methyl- (CA INDEX NAME)



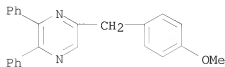
RN 106615-28-5 CAPLUS

CN Pyrazine, 2,3-diphenyl-5-(phenylmethyl)- (CA INDEX NAME)



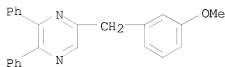
RN 106615-29-6 CAPLUS

CN Pyrazine, 5-[(4-methoxyphenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



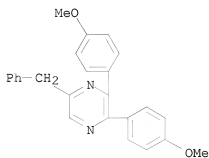
RN 106615-30-9 CAPLUS

CN Pyrazine, 5-[(3-methoxyphenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



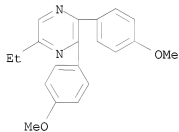
RN 106615-31-0 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-(phenylmethyl)- (CA INDEX NAME)



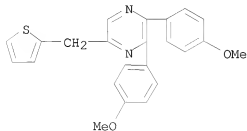
RN 106615-34-3 CAPLUS

CN Pyrazine, 5-ethyl-2,3-bis(4-methoxyphenyl)- (CA INDEX NAME)



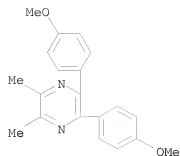
RN 106615-35-4 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-(2-thienylmethyl)- (CA INDEX NAME)

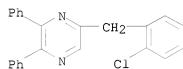


RN 106615-37-6 CAPLUS

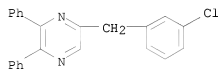
CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-dimethyl- (CA INDEX NAME)



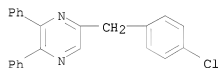
RN 122956-21-2 CAPLUS  
 CN Pyrazine, 5-[(2-chlorophenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



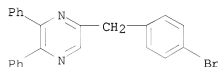
RN 122956-22-3 CAPLUS  
 CN Pyrazine, 5-[(3-chlorophenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



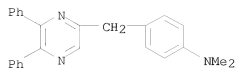
RN 122956-23-4 CAPLUS  
 CN Pyrazine, 5-[(4-chlorophenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



RN 122956-24-5 CAPLUS  
 CN Pyrazine, 5-[(4-bromophenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)

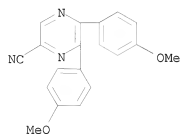


RN 122956-25-6 CAPLUS  
 CN Benzenamine, 4-[(5,6-diphenylpyrazinyl)methyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



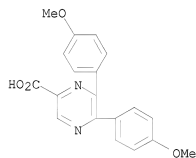
RN 122956-27-8 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



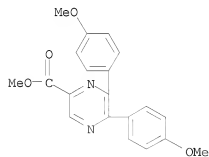
RN 122956-28-9 CAPLUS

CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



RN 122956-29-0 CAPLUS

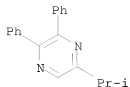
CN Pyrazinecarboxylic acid, 5,6-bis(4-methoxyphenyl)-, methyl ester (9CI)  
(CA INDEX NAME)



RN 199783-04-5 CAPLUS

CN Pyrazine, 5-(1-methylethyl)-2,3-diphenyl- (CA INDEX NAME)



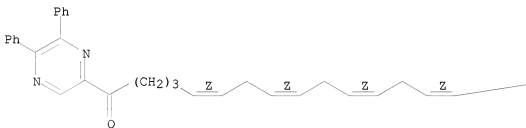


RN 199783-05-6 CAPLUS

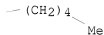
CN 5,8,11,14-Eicosatetraen-1-one, 1-(5,6-diphenylpyrazinyl)-, (all-Z)- (9CI)  
(CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A

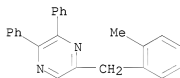


PAGE 1-B



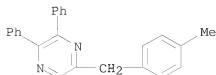
RN 199783-06-7 CAPLUS

CN Pyrazine, 5-[(2-methylphenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



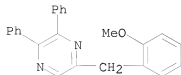
RN 199783-07-8 CAPLUS

CN Pyrazine, 5-[(4-methylphenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



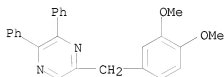
RN 199783-08-9 CAPLUS

CN Pyrazine, 5-[(2-methoxyphenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



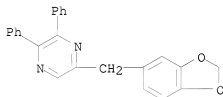
RN 199783-09-0 CAPLUS

CN Pyrazine, 5-[(3,4-dimethoxyphenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



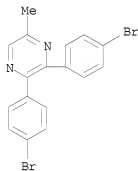
RN 199783-10-3 CAPLUS

CN Pyrazine, 5-(1,3-benzodioxol-5-ylmethyl)-2,3-diphenyl- (CA INDEX NAME)



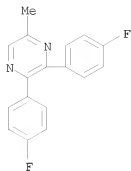
RN 199783-11-4 CAPLUS

CN Pyrazine, 2,3-bis(4-bromophenyl)-5-methyl- (CA INDEX NAME)



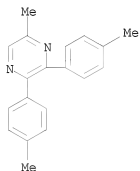
RN 199783-12-5 CAPLUS

CN Pyrazine, 2,3-bis(4-fluorophenyl)-5-methyl- (CA INDEX NAME)



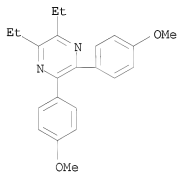
RN 199783-13-6 CAPLUS

CN Pyrazine, 5-methyl-2,3-bis(4-methylphenyl)- (CA INDEX NAME)



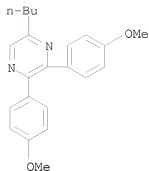
RN 199783-14-7 CAPLUS

CN Pyrazine, 2,3-diethyl-5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)

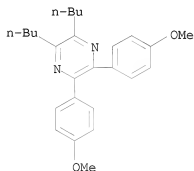


RN 199783-15-8 CAPLUS

CN Pyrazine, 5-butyl-2,3-bis(4-methoxyphenyl)- (CA INDEX NAME)

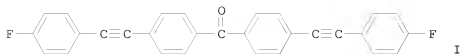


RN 199783-16-9 CAPLUS  
 CN Pyrazine, 2,3-dibutyl-5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)

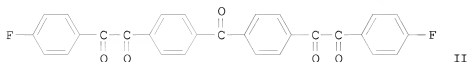


REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 155 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1997:525292 CAPLUS  
 DOCUMENT NUMBER: 127:220437  
 TITLE: New activated bisfluoroaromatic compounds  
 AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Belomoina, N. M.; Mikitaev, A. K.; Sarkisyan, G. B.; Keshtova, S. V.  
 CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 117813, Russia  
 SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (1997), 46(4), 777-779  
 CODEN: RCBUEY; ISSN: 1066-5285  
 PUBLISHER: Consultants Bureau  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



I



II

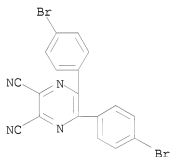
AB Bis(p-fluorophenylethynyl) derivs. were obtained by the reaction of bisbromoarom. compds. with p-fluorophenylacetylene in the presence of a Pd catalyst. Subsequent oxidation of these products using an I2-DMSO system led to new bis(p-fluorophenylglyoxalyl)ketones,  $\alpha$ -diketones, and heterocyclic compds. For example, the coupling of (4-fluorophenyl)acetylene with 4,4'-dibromobenzophenone gave ketone I. Further oxidation of I gave the bisglyoxal II.

IT 101579-12-8

RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of bisfluoroarom. compds.)

RN 101579-12-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)

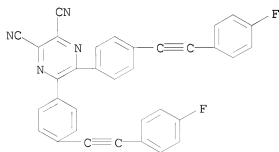


IT 194936-26-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of bisfluoroarom. compds.)

RN 194936-26-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]- (9CI) (CA INDEX NAME)



## RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 156 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1997:324032 CAPLUS  
 DOCUMENT NUMBER: 126:299542  
 TITLE: Blue-emitting materials and electroluminescent devices  
 containing these materials  
 INVENTOR(S): Dodabalapur, Ananth; Strukelj, Marko; Jordan, Rebecca  
 PATENT ASSIGNEE(S): Lucent Technologies Inc., USA  
 SOURCE: Eur. Pat. Appl., 19 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 763965	A2	19970319	EP 1996-306381	19960903
EP 763965	A3	19970611		
R: DE, FR, GB				
US 5904994	A	19990518	US 1996-673864	19960702
JP 09188876	A	19970722	JP 1996-242815	19960913
JP 3096642	B2	20001010		
JP 2000208274	A	20000728	JP 2000-16564	19960913
PRIORITY APPLN. INFO.:			US 1995-3721P	P 19950913
			JP 1996-242815	A3 19960913

OTHER SOURCE(S): MARPAT 126:299542

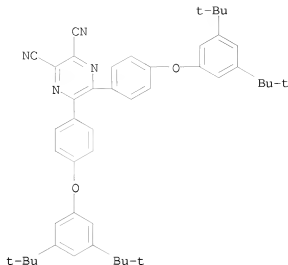
AB Electroluminescent devices emitting at 400-650 nm are described that  
 comprise a glass substrate, an anode, a layer of a hole transporting  
 materials, a layer of blue-emitting material having a nonpolymeric mol.  
 structure that comprises a five or six-membered heterocyclic moiety  
 selected from the groups consisting of oxazole, imidazole, quinoline, and  
 pyrazine with  $\geq 3$  organic substituents pendant to them and with an average  
 crystal grain size of .ltorsim.1000 Å, a layer of an  
 electron-transporting material, and a cathode. The thickness of the layer  
 of the blue-emitting material is preferably less than 600 Å. The  
 hole-transporting layer may be a diamine, especially bis(triphenyl)diamine, and  
 the electron transporter may be Alq. The blue-emitting materials are also  
 claimed; a preferred material is 2-naphthyl-4,5-(4-methoxyphenyl)oxazole.  
 The blue-emitting materials can be formed into films with advantageous  
 properties.

IT 189155-56-4P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
 preparation); PREP (Preparation); USES (Uses)  
 (blue-emitting heterocyclic materials and electroluminescent devices  
 containing them)

RN 189155-56-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[3,5-bis(1,1-  
 dimethylethyl)phenoxy]phenyl]- (CA INDEX NAME)



L14 ANSWER 157 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:195396 CAPLUS

DOCUMENT NUMBER: 126:171941

TITLE: Grignard Reactions on Ortho Dicarboxylic Arene Derivatives. Synthesis of 1,3-Dithienylisothianaphthene Compounds

AUTHOR(S): Kiebooms, Rafaeel H. L.; Adriaenssens, Peter J. A.; Vanderzande, Dirk J. M.; Gelan, Jan M. J. V.

CORPORATE SOURCE: Institute for Materials Research (IMO) Division Chemistry, Limburg University, Diepenbeek, B-3590, Belg.

SOURCE: Journal of Organic Chemistry (1997), 62(5), 1473-1480  
CODEN: JOCEAH; ISSN: 0022-3263

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 126:171941

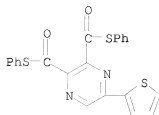
AB 1,3-Dithienylisothianaphthene is obtained through ring closure of 1,2-dithienoylbenzene (I). The synthesis of I has been accomplished based on a Grignard reaction by adding 2-thiophenemagnesium bromide to 1,2-di(S-(2-pyridinyl)) benzenedithioate (II) to obtain I in a yield of 95%. The use of II avoids the formation of the corresponding 3,3-dithienyl-3H-isobenzofuran-1(3H)-one (dithienylphthalide). The same procedure is applied to obtain 1,3-dithienyl-4,5,6,7-tetrahydroisothianaphthene and 1,3-dithienyl-4,5,6,7-tetrafluoroisothianaphthene. The synthesis of the 2,3-dithienoylpyridine, 3,4-dithienoylpyridine, and 2,3-dithienoylpyrazine however fails. The presence of nitrogen in the central ring system influences the result of the Grignard reaction. Possibly the free electron pair of the nitrogen interferes with the formation of a stable six-membered ring intermediate which is essential for the diketone formation.

IT 187282-72-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of 1,3-dithienylisothianaphthene compds. via Grignard reactions on ortho-dicarboxylic arene derivs.)

RN 187282-72-0 CAPLUS

CN 2,3-Pyrazinedicarbothioic acid, 5-(2-thienyl)-, S,S-diphenyl ester (9CI)  
(CA INDEX NAME)



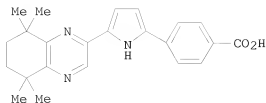
REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 158 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN  
 ACCESSION NUMBER: 1997:189938 CAPLUS  
 DOCUMENT NUMBER: 126:186111  
 TITLE: Preparation of heterocyclic carboxylic acid derivatives as retinoid receptor agonists  
 INVENTOR(S): Kikuchi, Kouichi; Tagami, Katsuya; Yoshimura, Hiroyuki; Hibi, Shigeki; Nagai, Mitsuo; Abe, Shinya; Okita, Makoto; Hida, Takayuki; Higashi, Seiko; Tokuhara, Naoki; Kobayashi, Seiichi; et al.  
 PATENT ASSIGNEE(S): Eisai Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 160 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9702244	A1	19970123	WO 1996-JP1782	19960627
W: AU, CA, CN, HU, KR, MX, NO, NZ, RU, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 09071566	A	19970318	JP 1996-141433	19960604
JP 3964478	B2	20070822		
AU 9662422	A	19970205	AU 1996-62422	19960627
EP 838453	A1	19980429	EP 1996-921104	19960627
EP 838453	B1	20050427		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
AT 294160	T	20050515	AT 1996-921104	19960627
EP 1559709	A1	20050803	EP 2005-1823	19960627
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
US 5977108	A	19991102	US 1997-981770	19971230
US 6329402	B1	20011211	US 1999-313087	19990517
US 2002032202	A1	20020314	US 2001-910012	20010723
US 6541474	B2	20030401		
US 2002103234	A1	20020801	US 2001-910068	20010723
US 6630463	B2	20031007		
US 2003144276	A1	20030731	US 2003-336756	20030106
US 6884808	B2	20050426		
PRIORITY APPLN. INFO.:			JP 1995-166004	A 19950630
			JP 1996-141433	A 19960604
			EP 1996-921104	A3 19960627
			WO 1996-JP1782	W 19960627
			US 1997-981770	A3 19971230
			US 1999-313087	XX 19990517
			US 2001-910068	A3 20010723

OTHER SOURCE(S): MARPAT 126:186111  
 GI



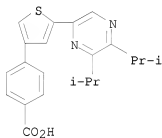


AB Heterocyclic carboxylic acid derivs. AB(D)nCOM [A is a heteroaryl group which has at least one nitrogen atom and may be substituted, or the like; B is heteroarylene, CONH, CR6:CR7 (R6 and R7 being each H, lower alkyl or the like) or the like; D is arylene, heteroarylene or the like; n is 0 or 1; and M is hydroxyl, lower alkoxy or the like] are prepared. In an in vitro retinoid receptor binding assay, tetrahydroquinoxaline derivative I showed IC50 of 1.6 nM, vs. IC50 of 1.1 nM shown by all-trans-retinoic acid.

IT 187400-42-6P 187400-58-4P  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of heterocyclic carboxylic acid derivs. as retinoid receptor agonists)

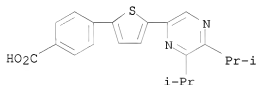
RN 187400-42-6 CAPLUS

CN Benzoic acid, 4-[5-[5,6-bis(1-methylethyl)pyrazinyl]-3-thienyl]- (9CI)  
 (CA INDEX NAME)



RN 187400-58-4 CAPLUS

CN Benzoic acid, 4-[5-[5,6-bis(1-methylethyl)pyrazinyl]-2-thienyl]- (9CI)  
 (CA INDEX NAME)



L14 ANSWER 159 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:102094 CAPLUS

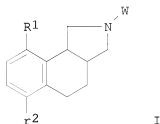
DOCUMENT NUMBER: 126:199575

TITLE: Tricyclic substituted hexahydrobenz[e]isoindole  
 alpha-1 adrenergic antagonists

INVENTOR(S): Meyer, Michael D.; Altenbach, Robert J.; Basha, Fatima

PATENT ASSIGNEE(S):  
SOURCE: Z.; Carroll, William A.; Drizin, Irene; Elmore, Steven W.; Kerwin, James F., Jr.; Lebold, Suzanne A.; Lee, Edmund L.; Sippy, Kevin B.; Tietje, Karin R.; Wendt, Michael D.  
Abbott Laboratories, USA  
U.S., 73 pp., Cont.-in-part of U.S. Ser. No. 379,414, abandoned.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5597823	A	19970128	US 1995-463528	19950605
IL 116405	A	20010913	IL 1995-116405	19951215
CA 2211212	A1	19960801	CA 1996-2211212	19960111
WO 9622992	A1	19960801	WO 1996-US72	19960111
W: AU, CA, JP, KR, MX				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9647457	A	19960814	AU 1996-47457	19960111
AU 705283	B2	19990520		
EP 808318	A1	19971126	EP 1996-903340	19960111
EP 808318	B1	20000628		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE				
AT 194141	T	20000715	AT 1996-903340	19960111
ES 2149451	T3	20001101	ES 1996-903340	19960111
PT 808318	T	20001229	PT 1996-903340	19960111
JP 2001504797	T	20010410	JP 1996-522867	19960111
GR 3034485	T3	20001229	GR 2000-402174	20000926
PRIORITY APPLN. INFO.:				
			US 1995-379414	B2 19950127
			US 1995-463528	A 19950605
			WO 1996-US72	W 19960111
OTHER SOURCE(S): MARPAT 126:199575				
GI				



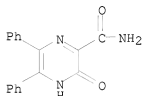
AB I (W = tricyclic heterocyclic ring system, e. g. pyrazinothienopyrimidinediones, pyridofuopyrimidinediones, pyrazinothienopyrimidinediones; n = 2-6; R1 and R2 = H, alkoxy, hydroxy, alkyl, halo, carboxy, alkoxy carbonyl) and their pharmaceutically acceptable salts were prepared. I are  $\alpha$ -1 adrenergic antagonists and useful in the treatment of BPH (benign prostrate hyperplasia).  $\alpha$ -1 Antagonist compns. and a method for antagonizing  $\alpha$ -1 receptors and treating BPH are also disclosed.

IT 34121-79-4  
RL: RCT (Reactant); RACT (Reactant or reagent)

(for preparation of tricyclic substituted hexahydrobenzisoindoles as alpha-1 adrenergic antagonists)

RN 34121-79-4 CAPLUS

CN Pyrazinecarboxamide, 3,4-dihydro-3-oxo-5,6-diphenyl- (9CI) (CA INDEX NAME)



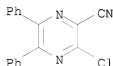
IT 34122-24-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(for preparation of tricyclic substituted hexahydrobenzisoindoles as alpha-1 adrenergic antagonists)

RN 34122-24-2 CAPLUS

CN Pyrazinecarbonitrile, 3-chloro-5,6-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 160 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:653177 CAPLUS

DOCUMENT NUMBER: 125:288835

TITLE: Imino compound and heat-sensitive recording material capable of providing durable images using same

INVENTOR(S): Matsumoto, Mansuke; Sasaki, Nobuaki; Sawano, Bunji

PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Japan; Yamamoto Chemicals Inc

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

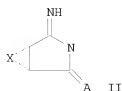
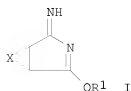
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08199081	A	19960806	JP 1995-71329	19950329
PRIORITY APPLN. INFO.:			JP 1995-71329	A 19950329
			JP 1994-287864	19941122

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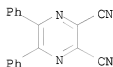


AB The imino compound is represented by I (X = aromatic ring; R1 = C1-8 alkyl).  
 The imino compound is represented by II [X = aromatic ring; A = :NR2,  
 -(OR2,OR3), -O-R5-O-; R2, R3, R4 = C1-8 alkyl; R5 = C1-3 alkylene]. The  
 material comprises at least one of the above imino compds. and a carbonyl  
 compound with H at  $\alpha$ -position. The images show excellent stability.

IT 52197-23-6P, 2,3-Dicyano-5,6-diphenylpyrazine  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (preparation of imino compound)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 161 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:633082 CAPLUS

DOCUMENT NUMBER: 125:315223

TITLE: Substituted tetra-2,3-pyrazinoporphyrazines. Part II.  
 Bis(tri-n-hexylsiloxy)silicon derivatives

AUTHOR(S): Kudrevich, Svetlana V.; van Lier, Johan E.

CORPORATE SOURCE: Fac. Med., Univ. Sherbrooke, Sherbrooke, QC, J1H 5N4,  
 Can.

SOURCE: Canadian Journal of Chemistry (1996), 74(9), 1718-1723  
 CODEN: CJCHAG; ISSN: 0008-4042

PUBLISHER: National Research Council of Canada

DOCUMENT TYPE: Journal

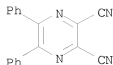
LANGUAGE: English

AB Dichlorosilicon complexes of substituted tetra-2,3-pyrazinoporphyrazines  
 were obtained via condensation of 2,3-dicyanopyrazine,  
 2,3-dicyano-5,6-diphenylpyrazine, 2,3-dicyanoquinoxaline,  
 2,3-dicyano-benzo[f]quinoxaline, and 2,3-dicyano-dibenzo[f,h]quinoxaline  
 with silicon tetrachloride in the presence of urea, quinoline, and  
 tri-n-butylamine. Hydrolysis of the Si-Cl bond in concentrated H2SO4, followed  
 by treatment with 0.01N NaOH and aqueous NH3, afforded the corresponding  
 dihydroxides, which were converted to the bis(tri-n-hexylsiloxy)silicon  
 derivs. via reaction with tri(n-hexyl)chlorosilane in 3-picoline  
 (2,4,6-collidine) in the presence of tri-n-butylamine. The axial  
 tri-n-hexylsiloxy substituents at the central silicon atom prevent  
 aggregation in organic solvents, permitting detailed studies on the effects  
 of structural modification on the electronic spectra of  
 tetraazaphthalocyanines. The authors' data show that each benzo ring  
 addition, angularly condensed to the tetra-2,3-quinoxalinoporphyrazine,  
 induces a hypsochromic shift (.apprx.10-15 nm) of the main absorption maximum

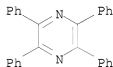
IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (for condensation preparation of silicon tetrapyrazinoporphyrazinate  
 complexes)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)

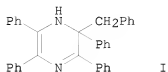


L14 ANSWER 162 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1996:619376 CAPLUS  
 DOCUMENT NUMBER: 125:300538  
 TITLE: LDA-promoted decomposition of benzenesulfenamides. A route to aminyl radicals by dioxygen oxidation of lithium amides  
 AUTHOR(S): Barbieri, Anna; Montevecchi, Pier Carlo; Nanni, Daniele; Navacchia, Maria Luisa  
 CORPORATE SOURCE: Dip. Chim. Org. "A. Mangini", Univ. Bologna, Bologna, 14036, Italy  
 SOURCE: Tetrahedron (1996), 52(41), 13255-13264  
 CODEN: TETRAB; ISSN: 0040-4020  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The LDA-promoted decomposition of N-monosubstituted sulfenamides PhSNHC6H4R1-4 (R1 = OMe, Me, Cl, CN) occurs through the formation of thioaminyl anions, which undergo oxidation either at sulfur, with formation of sulfonamides, or at nitrogen, with formation of thioaminyl radicals, depending on the nature of the 4'-substituent. The reaction of N,N-disubstituted sulfenamides proceeds through the intermediacy of a lithium complex capable of generating aminyl radicals via sulfenyl group transfer to the diisopropylamido anion and subsequent aerial oxidation of the resulting lithium amides.  
 IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (LDA-promoted decomposition of benzenesulfenamides)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



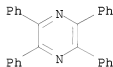
L14 ANSWER 163 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1996:592046 CAPLUS  
 DOCUMENT NUMBER: 125:328658  
 TITLE: Interaction of alkali metals with unsaturated heterocyclic compounds. The reductive metalation of 2,3,5,6-tetraphenylpyrazine and the synthesis of 1,2-dihydro-1,4-diazine derivatives  
 AUTHOR(S): Kaban, Seniz; Ocal, Nuket  
 CORPORATE SOURCE: Department of Chemistry, Yildiz Technical University, Istanbul, 80270, Turk.  
 SOURCE: Recueil des Travaux Chimiques des Pays-Bas (1996), 115(7/8), 377-380  
 CODEN: RTCPA3; ISSN: 0165-0513  
 PUBLISHER: Elsevier

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB Treatment of 2,3,5,6-tetraphenylpyrazine with sodium in THF effected the formation of a monomeric dianion. The chemical behavior of this new disodium adduct was characterized by a variety of reagents. Generally, the protonation (water), alkylation (Me iodide and benzyl chloride), and acylation (Me and Et chloroformate) products were 1,2-dihydrotetraphenyldiazine derivs., e.g., I. An annulation of the pyrazine ring system was accomplished by treating the dianion with polymethylene chlorides, Cl(CH<sub>2</sub>)<sub>n</sub>Cl (n = 2, 3, 4).

IT 642-04-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (metalation and reactions of tetraphenylpyrazine)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 164 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1996:580282 CAPLUS  
 DOCUMENT NUMBER: 125:221858  
 TITLE: Preparation of tricyclic substituted benz[e]isoindoles as  $\alpha$ 1 adrenergic antagonists  
 INVENTOR(S): Meyer, Michael D.; Altenbach, Robert J.; Basha, Fatima Z.; Carroll, William A.; Drizin, Irene; Kerwin, James F., Jr.; Lebold, Suzanne A.; Lee, Edmund L.; Elmore, Steven W.; et al.  
 PATENT ASSIGNEE(S): Abbott Laboratories, USA  
 SOURCE: PCT Int. Appl., 180 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9622992	A1	19960801	WO 1996-US72	19960111
W: AU, CA, JP, KR, MX				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5597823	A	19970128	US 1995-463528	19950605
AU 9647457	A	19960814	AU 1996-47457	19960111

AU 705283	B2	19990520		
EP 808318	A1	19971126	EP 1996-903340	19960111
EP 808318	B1	20000628		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE				
AT 194141	T	20000715	AT 1996-903340	19960111
JP 2001504797	T	20010410	JP 1996-522867	19960111
GR 3034485	T3	20001229	GR 2000-402174	20000926
PRIORITY APPLN. INFO.:			US 1995-379414	A 19950127
			US 1995-463528	A 19950605
			WO 1996-US72	W 19960111
OTHER SOURCE(S):	MARPAT 125:221858			
GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

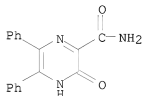
AB The title compds. [I; R1, R2 = H, alkoxy, OH, etc.; W = tricyclic heterocyclic ring system; n = 2-6] and their salts, useful in the treatment of benign prostatic hypertrophy (BPH), were prepared. Thus, reaction of urea II with benz[e]isindole III in the presence of (iPr)<sub>2</sub>NEt in DMSO afforded the desired product cis-IV.HCl which showed pA<sub>2</sub> of 8.37 for inhibition of phenylephrine(PE)-induced contraction of rat vas.

IT 34121-79-4

RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of tricyclic substituted benz[e]isindoles as  $\alpha$ 1 adrenergic antagonists)

RN 34121-79-4 CAPLUS

CN Pyrazinecarboxamide, 3,4-dihydro-3-oxo-5,6-diphenyl- (9CI) (CA INDEX NAME)

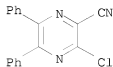


IT 34122-24-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of tricyclic substituted benz[e]isindoles as  $\alpha$ 1 adrenergic antagonists)

RN 34122-24-2 CAPLUS

CN Pyrazinecarbonitrile, 3-chloro-5,6-diphenyl- (8CI, 9CI) (CA INDEX NAME)



TITLE: Syntheses of Trisulfonated Phthalocyanines and Their Derivatives Using Boron(III) Subphthalocyanines as Intermediates

AUTHOR(S): Kudrevich, Svetlana V.; Gilbert, Sandra; van Lier, Johan E.

CORPORATE SOURCE: Faculty of Medicine, Universite de Sherbrooke, Sherbrooke, QC, J1H 5N4, Can.

SOURCE: Journal of Organic Chemistry (1996), 61(17), 5706-5707  
CODEN: JOCEAH; ISSN: 0022-3263

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

GI

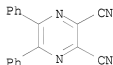
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Water-soluble, unsym. trisulfonated phthalocyanines I [X = CH, R = CMe<sub>3</sub>, R1 = H; RR1 = CH:CHC(CMe<sub>3</sub>):CH; X = N, R = R1 = Ph] were obtained as single products in the ring expansion of trisulfosubphthalocyanine II with diiminoindolines. The reaction proceeds at relatively low temperature with preparative yields. II was prepared by trimerization of chlorosulfonylphthalonitrile and hydrolysis.

IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of trisulfonated Phthalocyanines from Boron(III) subphthalocyanines)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 166 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:466654 CAPLUS

DOCUMENT NUMBER: 125:157774

TITLE: Anthelmintic activity of 6,7-diarylpteridines

AUTHOR(S): Ochoa, Carmen; Rodriguez, Juan; Lopez Garcia, Maria Luz; Martinez, Antonio Ramon; Martinez, Maria Mercedes

CORPORATE SOURCE: Fac. Farm., Univ. Complutense, Madrid, E-28006, Spain

SOURCE: Arzneimittel-Forschung (1996), 46(6), 643-648  
CODEN: ARZNAD; ISSN: 0004-4172

PUBLISHER: Cantor

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In search for new anthelmintic compds., some 6,7-diaryl-pteridines were synthesized from the corresponding diaminopyrimidines and aromatic aldehydes. Their anthelmintic activity was tested in vitro against Caenorhabditis elegans and Heligmosomoides polygyrus and in vivo against Trichinella spiralis. Structure-activity relationships are discussed.

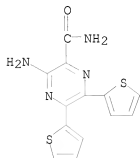
IT 180603-98-9P 180603-99-0P  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)



(anthelmintic activity and preparation of diarylpteridines)

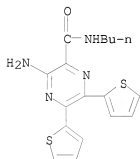
RN 180603-98-9 CAPLUS

CN Pyrazinecarboxamide, 3-amino-5,6-di-2-thienyl- (9CI) (CA INDEX NAME)



RN 180603-99-0 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-butyl-5,6-di-2-thienyl- (9CI) (CA INDEX NAME)



L14 ANSWER 167 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:313774 CAPLUS

DOCUMENT NUMBER: 124:356436

TITLE: Hydrazine derivatives and organic electroluminescent elements using same

INVENTOR(S): Hironaka, Yoshio; Nakamura, Hiroaki

PATENT ASSIGNEE(S): Idemitsu Kosan Co, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

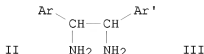
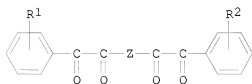
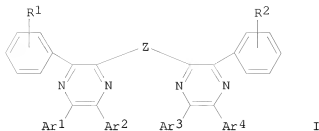
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08073443	A	19960319	JP 1994-210096	19940902
PRIORITY APPLN. INFO.: GI			JP 1994-210096	19940902



AB The title hydrazine derivs. I [R1,2 = H, substituent; Z = specified aromatic bivalent group; Ar1-4 = Ph, naphthyl] are manufactured by condensation reaction of II with III [Ar = Ar1 or Ar3; Ar' = Ar2 or Ar4]. This hydrazine derivs. can be used for making organic electroluminescent elements.

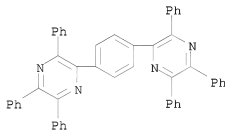
IT 176771-41-8P

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)

(electroluminescent element from)

RN 176771-41-8 CAPLUS

CN Pyrazine, 2,2'-(1,4-phenylene)bis[3,5,6-triphenyl- (CA INDEX NAME)



L14 ANSWER 168 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:282693 CAPLUS

DOCUMENT NUMBER: 125:58442

TITLE: N-Hydroxyamide-containing heterocycles. Part 7. Preparation and photochemical behavior of 1-benzyloxy-2(1H)-pyrazinones

AUTHOR(S): Ohkanda, Junko; Kumasaka, Toshihiko; Takasu, Aki; Hasegawa, Tadashi; Katoh, Akira

CORPORATE SOURCE: Department of Industrial chemistry, Seikei University, Tokyo, 180, Japan

SOURCE: Heterocycles (1996), 43(4), 883-889

CODEN: HTCYAM; ISSN: 0385-5414

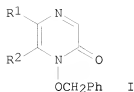
PUBLISHER: Japan Institute of Heterocyclic Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 125:58442

GI

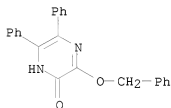


AB Synthesis of 1-benzyloxy-2(1H)-pyrazinones I [R1 = H, Me, R2 = H; R1 = R2 = Me, Ph; R1R2 = (CH2)4] having substituents at C-5 and C-6 positions and their photochem. behavior have been studied. Upon irradiation, I underwent N-O bond cleavage in high quantum yields. The rearrangement of the benzyloxy group to the C-3 position of the ring and [2+2] cycloaddn. were also observed

IT 177938-63-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and photochem. reaction of benzyloxypyrazinones)

RN 177938-63-5 CAPLUS

CN 2(1H)-Pyrazinone, 5,6-diphenyl-3-(phenylmethoxy)- (CA INDEX NAME)



L14 ANSWER 169 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:984439 CAPLUS

DOCUMENT NUMBER: 124:146066

TITLE: Regioselective C-functionalization of 2,3-dicyanopyrazine derivatives via photoinduced electron transfer

AUTHOR(S): Mizuno, Kazuhiko; Konishi, Gen-ichi; Nishiyama, Toshinori; Inoue, Hiroo

CORPORATE SOURCE: Coll. Eng., Univ. Osaka Prefecture, Osaka, 593, Japan

SOURCE: Chemistry Letters (1995), (12), 1077-8  
 CODEN: CMLTAG; ISSN: 0366-7022

PUBLISHER: Nippon Kagakkai

DOCUMENT TYPE: Journal

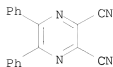
LANGUAGE: English

AB Irradiation of an acetonitrile solution containing 2,3-dicyano-5,6-diphenylpyrazine with allylic silanes, benzylsilane, and ketene silyl acetal gave the mono-substituted products in excellent yields. This reaction is useful for the functionalization of pyrazine ring.

IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (regioselective allylation or benzylation of 2,3-dicyanopyrazines via photoinduced electron transfer)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)

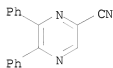


IT 81225-12-9P 173417-48-6P 173417-50-0P  
 173417-51-1P 173417-52-2P 173417-53-3P  
 173417-54-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (regioselective allylation or benzylation of 2,3-dicyanopyrazines via  
 photoinduced electron transfer)

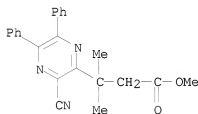
RN 81225-12-9 CAPLUS

CN Pyrazinecarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



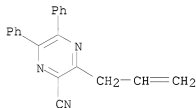
RN 173417-48-6 CAPLUS

CN Pyrazinepropanoic acid, 3-cyano- $\beta,\beta$ -dimethyl-5,6-diphenyl-,  
 methyl ester (9CI) (CA INDEX NAME)



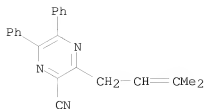
RN 173417-50-0 CAPLUS

CN Pyrazinecarbonitrile, 5,6-diphenyl-3-(2-propenyl)- (9CI) (CA INDEX NAME)

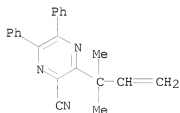


RN 173417-51-1 CAPLUS

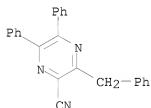
CN Pyrazinecarbonitrile, 3-(3-methyl-2-butenyl)-5,6-diphenyl- (9CI) (CA  
 INDEX NAME)



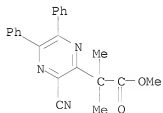
RN 173417-52-2 CAPLUS  
 CN Pyrazinecarbonitrile, 3-(1,1-dimethyl-2-propenyl)-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 173417-53-3 CAPLUS  
 CN Pyrazinecarbonitrile, 5,6-diphenyl-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



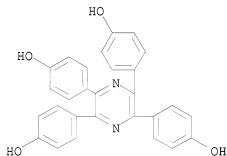
RN 173417-54-4 CAPLUS  
 CN Pyrazineacetic acid, 3-cyano- $\alpha,\alpha$ -dimethyl-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



L14 ANSWER 170 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:951496 CAPLUS  
 DOCUMENT NUMBER: 124:147109  
 TITLE: Synthesis of 2,3,5,6-tetrakis(4-hydroxyphenyl)pyrazine and related compounds

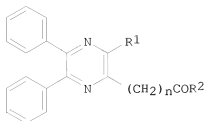
INVENTOR(S): Kvakovszky, George; Vicari, Richard; Tafesh, Ahamed M.; Juneau, Kathleen N.; Fruchey, Olan S.; Mcdonough, Joseph A.; Kuila, Debasish  
 PATENT ASSIGNEE(S): Hoechst Celanese Corp., USA  
 SOURCE: U.S., 10 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5459266	A	19951017	US 1994-191848	19940204
PRIORITY APPLN. INFO.:			US 1994-191848	19940204
OTHER SOURCE(S):	MARPAT 124:147109			
AB	2,3,5,6-Tetrakis(4-hydroxyphenyl)pyrazine is synthesized and considered to be useful as a monomer for a variety of high performance polymers.			
IT	165378-50-7P RL: SPN (Synthetic preparation); PREP (Preparation) (synthesis of 2,3,5,6-tetrakis(4-hydroxyphenyl)pyrazine and related compds.)			
RN	165378-50-7 CAPLUS			
CN	Phenol, 4,4',4'',4'''-(2,3,5,6-pyrazinetetrayl)tetrakis- (CA INDEX NAME)			



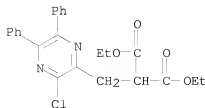
L14 ANSWER 171 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:886069 CAPLUS  
 DOCUMENT NUMBER: 123:286091  
 TITLE: Preparation of 2,3-diphenylpyrazine derivatives as herbicides for rice paddy  
 INVENTOR(S): Yanai, Toshiaki; Tsukamoto, Yoshihisa; Sakamoto, Takashi; Teramura, Masahiro; Pponma, Toyokuni  
 PATENT ASSIGNEE(S): Sankyo Co, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07126256	A	19950516	JP 1993-270363	19931028
PRIORITY APPLN. INFO.:			JP 1993-270363	19931028
OTHER SOURCE(S):	MARPAT 123:286091			
GI				



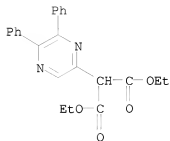
I

- AB The title compds. [I; R1 = H, halo, C1-4 alkyl, cyano; R2 = OH, C1-8 alkoxy, C3-6 cycloalkyloxy, optionally trialkylsilyl-substituted C1-4 alkoxy-C1-2 alkoxy, C3-4 alkenyloxy or alkynyloxy, PhO, OCH2Ph, pyridylmethyloxy, tetrahydrofuranylmethyloxy, anilino, phenylhydrazino, phenylsulfonylamino, NHOR3, ON:CR4R5, ONHR6, C1-2 alkoxy-carbonylmethylthio; wherein R3, R4 = H, Me, Et; R5 = C1-4 alkyl, C3-6 cycloalkyl, (halo)phenyl, (halo)pyridyl, or CR4R5 forms a 5- to 6-membered ring saturated carbocyclyl; R6 = H, C1-4 alkyl or alkylcarbonyl, (halo)benzoyl, C1-4 alkoxy-carbonyl] are prepared. Thus, di-Et malonate was added dropwise to a suspension of NaH in DMF under ice-cooling and stirred for 15 h, followed by adding a solution of 2-chloro-5,6-diphenylpyrazine in DMF, and the mixture was stirred at 120° for 3 h to give 73.5% di-Et 5,6-diphenyl-2-pyrazinylmalonate. To a solution of the latter compound in EtOH was added 3 N aqueous NaOH and the resulting mixture was stirred at room temperature for 6 h and left to stand at overnight to give, after workup and acidification with dilute aqueous HCl, 83.8% 5,6-diphenyl-2-pyrazinylacetic acid. This compound was dissolved in THF, successively treated dropwise with Et3N, Et chlorocarbonate, and EtOH under ice-cooling and stirring, and stirred at room temperature for 30 min to give 100% I (R1 = H, n = 2, R2 = OEt) (II). II at 20 g/are (preemergence) inhibited 91-100% the growth of 5 weeds including Echinochloa crus-galli, broad leaf weed, Scirpus juncoides, Eleocharis acicularis, Cyperus serotinus, and Eleocharis kuroguwai in flooded rice paddy soil and gave no damage to rice seedlings.
- IT 169501-09-1P 169501-10-4P, Diethyl 5,6-diphenyl-2-pyrazinylmalonate 169501-11-5P, 5,6-Diphenyl-2-pyrazinylacetic acid 169501-12-6P, Diethyl 3-chloro-5,6-diphenyl-2-pyrazinylmalonate 169501-13-7P, 3-Chloro-5,6-diphenyl-2-pyrazinylacetic acid 169501-14-8P, 3-Chloro-2-chloromethyl-5,6-diphenylpyrazine 169501-16-0P, 3-Chloro-5,6-diphenyl-2-formylpyrazine  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate for preparation of (diphenylpyrazinyl)alkanoic acid derivs. as herbicides for rice paddy)
- RN 169501-09-1 CAPLUS
- CN Propanedioic acid, [(3-chloro-5,6-diphenylpyrazinyl)methyl]-, diethyl ester (9CI) (CA INDEX NAME)



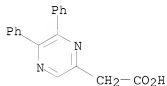
RN 169501-10-4 CAPLUS

CN Propanedioic acid, (5,6-diphenylpyrazinyl)-, diethyl ester (9CI) (CA INDEX NAME)



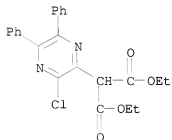
RN 169501-11-5 CAPLUS

CN Pyrazineacetic acid, 5,6-diphenyl- (9CI) (CA INDEX NAME)



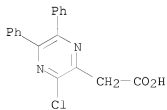
RN 169501-12-6 CAPLUS

CN Propanedioic acid, (3-chloro-5,6-diphenylpyrazinyl)-, diethyl ester (9CI) (CA INDEX NAME)



RN 169501-13-7 CAPLUS

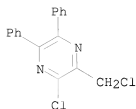
CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 169501-14-8 CAPLUS

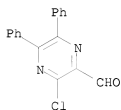


CN Pyrazine, 2-chloro-3-(chloromethyl)-5,6-diphenyl- (CA INDEX NAME)



RN 169501-16-0 CAPLUS

CN Pyrazinecarboxaldehyde, 3-chloro-5,6-diphenyl- (9CI) (CA INDEX NAME)

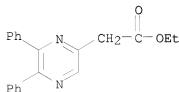


IT 147593-53-1P 169500-70-3P 169500-71-4P  
169500-72-5P 169500-73-6P 169500-74-7P  
169500-75-8P 169500-76-9P 169500-77-0P  
169500-78-1P 169500-79-2P 169500-80-5P  
169500-81-6P 169500-82-7P 169500-83-8P  
169500-84-9P 169500-85-0P 169500-86-1P  
169500-87-2P 169500-88-3P 169500-89-4P  
169500-90-7P 169500-91-8P 169500-92-9P  
169500-93-0P 169500-94-1P 169500-95-2P  
169500-96-3P 169500-97-4P 169500-98-5P  
169500-99-6P 169501-00-2P 169501-01-3P  
169501-02-4P 169501-03-5P 169501-04-6P  
169501-05-7P 169501-06-8P 169501-07-9P  
169501-08-0P

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation of (diphenylpyrazinyl)alkanoic acid derivs. as herbicides for rice paddy)

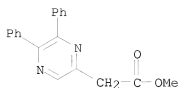
RN 147593-53-1 CAPLUS

CN Pyrazineacetic acid, 5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



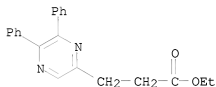
RN 169500-70-3 CAPLUS

CN Pyrazineacetic acid, 5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



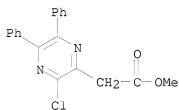
RN 169500-71-4 CAPLUS

CN Pyrazinepropanoic acid, 5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



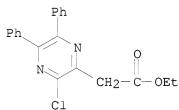
RN 169500-72-5 CAPLUS

CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



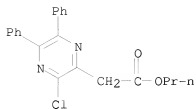
RN 169500-73-6 CAPLUS

CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)

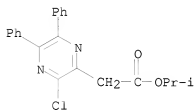


RN 169500-74-7 CAPLUS

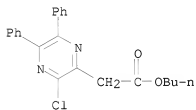
CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, propyl ester (9CI) (CA INDEX NAME)



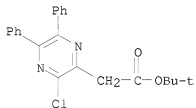
RN 169500-75-8 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, 1-methylethyl ester (9CI)  
 (CA INDEX NAME)



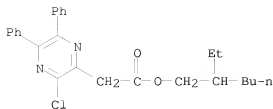
RN 169500-76-9 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, butyl ester (9CI) (CA INDEX NAME)



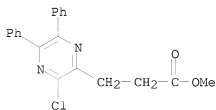
RN 169500-77-0 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, 1,1-dimethylethyl ester (9CI)  
 (CA INDEX NAME)



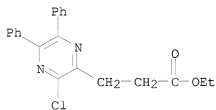
RN 169500-78-1 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



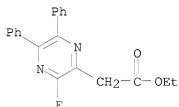
RN 169500-79-2 CAPLUS  
 CN Pyrazinepropanoic acid, 3-chloro-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



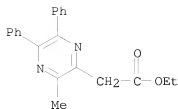
RN 169500-80-5 CAPLUS  
 CN Pyrazinepropanoic acid, 3-chloro-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



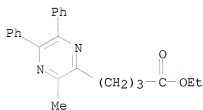
RN 169500-81-6 CAPLUS  
 CN Pyrazineacetic acid, 3-fluoro-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



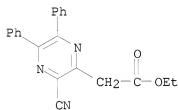
RN 169500-82-7 CAPLUS  
 CN Pyrazineacetic acid, 3-methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



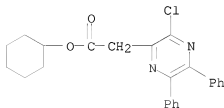
RN 169500-83-8 CAPLUS  
 CN Pyrazinebutanoic acid, 3-methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



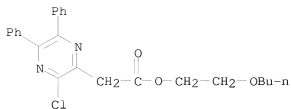
RN 169500-84-9 CAPLUS  
 CN Pyrazineacetic acid, 3-cyano-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



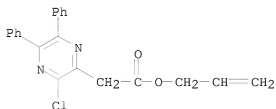
RN 169500-85-0 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, cyclohexyl ester (9CI) (CA INDEX NAME)



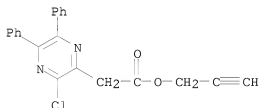
RN 169500-86-1 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, 2-butoxyethyl ester (9CI) (CA INDEX NAME)



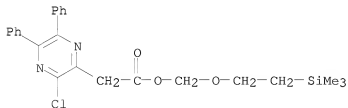
RN 169500-87-2 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, 2-propenyl ester (9CI) (CA INDEX NAME)



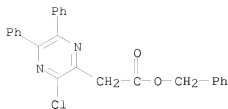
RN 169500-88-3 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, 2-propynyl ester (9CI) (CA INDEX NAME)



RN 169500-89-4 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, [2-(trimethylsilyl)ethoxymethyl] ester (9CI) (CA INDEX NAME)

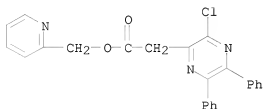


RN 169500-90-7 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, phenylmethyl ester (9CI) (CA INDEX NAME)



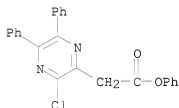
RN 169500-91-8 CAPLUS

CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, 2-pyridinylmethyl ester (9CI)  
(CA INDEX NAME)



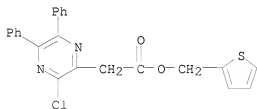
RN 169500-92-9 CAPLUS

CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, phenyl ester (9CI) (CA INDEX NAME)



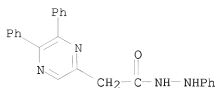
RN 169500-93-0 CAPLUS

CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, 2-thienylmethyl ester (9CI)  
(CA INDEX NAME)

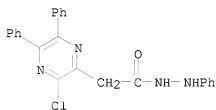


RN 169500-94-1 CAPLUS

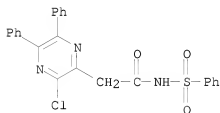
CN Pyrazineacetic acid, 5,6-diphenyl-, 2-phenylhydrazide (9CI) (CA INDEX NAME)



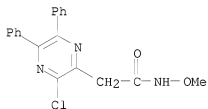
RN 169500-95-2 CAPLUS  
 CN Pyrazineacetic acid, 3-chloro-5,6-diphenyl-, 2-phenylhydrazide (9CI) (CA INDEX NAME)



RN 169500-96-3 CAPLUS  
 CN Pyrazineacetamide, 3-chloro-5,6-diphenyl-N-(phenylsulfonyl)- (9CI) (CA INDEX NAME)

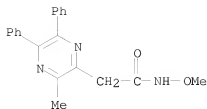


RN 169500-97-4 CAPLUS  
 CN Pyrazineacetamide, N-methoxy-3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)

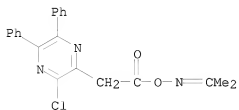


RN 169500-98-5 CAPLUS  
 CN Pyrazineacetamide, N-methoxy-3-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)

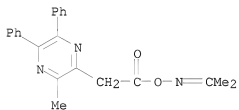




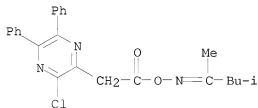
RN 169500-99-6 CAPLUS  
 CN 2-Propanone, O-[(3-chloro-5,6-diphenylpyrazinyl)acetyl]oxime (9CI) (CA INDEX NAME)



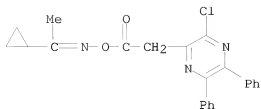
RN 169501-00-2 CAPLUS  
 CN 2-Propanone, O-[(3-methyl-5,6-diphenylpyrazinyl)acetyl]oxime (9CI) (CA INDEX NAME)



RN 169501-01-3 CAPLUS  
 CN 2-Pentanone, 4-methyl-, O-[(3-chloro-5,6-diphenylpyrazinyl)acetyl]oxime (9CI) (CA INDEX NAME)

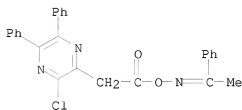


RN 169501-02-4 CAPLUS  
 CN Ethanone, 1-cyclopropyl-, O-[(3-chloro-5,6-diphenylpyrazinyl)acetyl]oxime (9CI) (CA INDEX NAME)



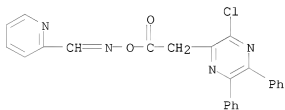
RN 169501-03-5 CAPLUS

CN Ethanone, 1-phenyl-, O-[(3-chloro-5,6-diphenylpyrazinyl)acetyl]oxime (9CI)  
(CA INDEX NAME)



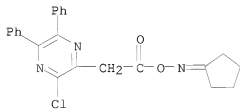
RN 169501-04-6 CAPLUS

CN 2-Pyridinecarboxaldehyde, O-[(3-chloro-5,6-diphenylpyrazinyl)acetyl]oxime  
(9CI) (CA INDEX NAME)



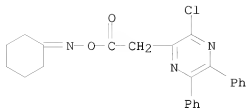
RN 169501-05-7 CAPLUS

CN Cyclopentanone, O-[(3-chloro-5,6-diphenylpyrazinyl)acetyl]oxime (9CI) (CA  
INDEX NAME)

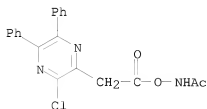


RN 169501-06-8 CAPLUS

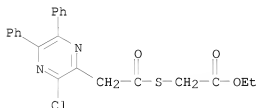
CN Cyclohexanone, O-[(3-chloro-5,6-diphenylpyrazinyl)acetyl]oxime (9CI) (CA  
INDEX NAME)



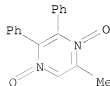
RN 169501-07-9 CAPLUS  
 CN Acetamide, N-[(3-chloro-5,6-diphenylpyrazinyl)acetyl]oxy]- (9CI) (CA INDEX NAME)



RN 169501-08-0 CAPLUS  
 CN Acetic acid, [[(3-chloro-5,6-diphenylpyrazinyl)acetyl]thio]-, ethyl ester (9CI) (CA INDEX NAME)



IT 169501-15-9, 5,6-Diphenyl-3-methylpyrazine-1,4-dioxide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction in preparation of (diphenylpyrazinyl)alkanoic acid derivs. as herbicides for rice paddy)  
 RN 169501-15-9 CAPLUS  
 CN Pyrazine, 5-methyl-2,3-diphenyl-, 1,4-dioxide (CA INDEX NAME)

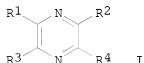


L14 ANSWER 172 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:735698 CAPLUS  
 DOCUMENT NUMBER: 123:341242  
 TITLE: Polymer compositions containing substituted pyrazine

INVENTOR(S): comonomers  
Kvakovszky, George; Vicari, Richard; Fruchey, Olan S.;  
Tafesh, Ahmed M.; Hilton, Charles B.  
PATENT ASSIGNEE(S): Hoechst Celanese Corp., USA  
SOURCE: U.S., 13 pp. Cont.-in-part of U.S. 5,393,860.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

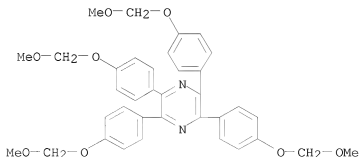
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5430123	A	19950704	US 1994-332662	19941101
US 5393860	A	19950228	US 1994-191682	19940204
PRIORITY APPLN. INFO.: OTHER SOURCE(S): MARPAT 123:341242			US 1994-191682	A2 19940204

GI



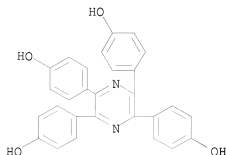
AB Pyrazine-based monomers are described, for incorporation into many different polymer types, have general structure I, in which R1-4 can contain polymerizable functionalities chosen from Ph substituted with NH<sub>2</sub>, SO<sub>3</sub>H, SO<sub>3</sub>Na, Cl, Br, F, OH, benzotriazolyl, -OC(:O)R<sub>5</sub> (R<sub>5</sub> = C1-10-alkyl, Ph, and vinyl), -O(CH<sub>2</sub>)<sub>3</sub>OC(:O)CR<sub>6</sub>:CH<sub>2</sub> (n = 1-100, R<sub>6</sub> = C1-10-alkyl), -C(:O)R<sub>7</sub> (R<sub>7</sub> = C1-10-alkyl, Ph), phenylsulfonyl, glycidyl ether, hydroxyalkylene, hydroxyphenyl, hydroxynaphthyl, etc. These monomers can be incorporated into polycarbonates, polysulfones, polyesters, polyarylate polyesters, polyether ether ketones, epoxy resins, polyamides, and polyurethanes.

IT 165378-49-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; preparation and deprotection of)  
RN 165378-49-4 CAPLUS  
CN Pyrazine, tetrakis[4-(methoxymethoxy)phenyl]- (9CI) (CA INDEX NAME)



IT 165378-50-7P  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(preparation and polymerization of; polymer compns. containing substituted pyrazine

comonomers)  
 RN 165378-50-7 CAPLUS  
 CN Phenol, 4, 4', 4'', 4'''-(2,3,5,6-pyrazinetetrayl)tetrakis- (CA INDEX NAME)



L14 ANSWER 173 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:701817 CAPLUS  
 DOCUMENT NUMBER: 123:84259  
 TITLE: Preparation of novel functional pyrazines as (co)monomers  
 INVENTOR(S): Kvakovszky, George; Vicari, Richard; Fruchey, Olan S.; Tafesh, Ahmed M.; Hilton, Charles B.  
 PATENT ASSIGNEE(S): Hoechst Celanese Corp., USA  
 SOURCE: U.S., 13 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

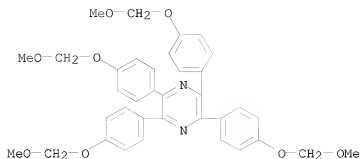
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5393860	A	19950228	US 1994-191682	19940204
US 5430123	A	19950704	US 1994-332662	19941101
PRIORITY APPLN. INFO.:			US 1994-191682	A2 19940204

OTHER SOURCE(S): MARPAT 123:84259

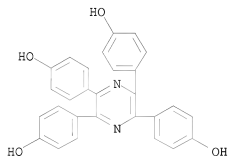
AB Amino- and/or hydroxy-functional aryl-substituted pyrazines of specified structure were prepared as monomers for high-performance polycarbonates, polysulfones, aromatic polyesters, polyether ketones, epoxy resins, polyimides, polyamides, and polyurethanes. Thus, nitrite oxidation of 4-HOC6H4COMe gave 83.3% 4-HOC6H4COCHO which was oximated (76% yield), the oxime hydrogenated over Pd/C, and the reaction mixture bubbled with air (to aromatize dihydropyrazine to pyrazine) to give 60% 2,5-bis(4-hydroxyphenyl)pyrazine (I). Heating bisphenol A 22.8, (4-FC6H4)2SO2 29, and I 0.267 g in the presence of 27.88 g K2CO3 in 150 g N-methylpyrrolidone/PhMe at 165° for 16 h with azeotropic removal of H2O gave 48 g polysulfone having intrinsic viscosity 0.35 (tetrachloroethane, 30°).

IT 165378-49-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and ether cleavage reaction; preparation of novel functional pyrazines as (co)monomers)

RN 165378-49-4 CAPLUS  
 CN Pyrazine, tetrakis[4-(methoxymethoxy)phenyl]- (9CI) (CA INDEX NAME)



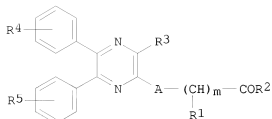
IT 165378-50-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of novel functional pyrazines as (co)monomers)  
 RN 165378-50-7 CAPLUS  
 CN Phenol, 4,4',4'',4'''-(2,3,5,6-pyrazinetetrayl)tetrakis- (CA INDEX NAME)



L14 ANSWER 174 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:541426 CAPLUS  
 DOCUMENT NUMBER: 122:290892  
 TITLE: Preparation of diphenylpyrazine derivatives as herbicides  
 INVENTOR(S): Yanai, Toshiaki; Tsukamoto, Yoshihisa; Sakamoto, Takashi; Teramura, Masahiro; Pponma, Toyokuni  
 PATENT ASSIGNEE(S): Sankyo Co, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07033752	A	19950203	JP 1993-176525	19930716
PRIORITY APPLN. INFO.:			JP 1993-176525	19930716
OTHER SOURCE(S):		MARPAT 122:290892		

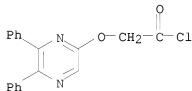
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AB The title compounds II; R<sub>1</sub> = H, alkyl, alkoxy, carbonylmethyl; R<sub>2</sub> = alkyl optionally halogenated by 1-3 halogen atoms, alkoxy, alkenyloxy, OH, cyclohexyloxy, PhO, pyridylcyanomethoxy, (un)substituted NH<sub>2</sub>; R<sub>3</sub> = H, alkyl, NO<sub>2</sub>, NH<sub>2</sub>, cyano, halo, PhCO, CH<sub>2</sub>Ph, alkoxy, carbonyl, alkoxy, carbonylmethyl; R<sub>4</sub>, R<sub>5</sub> = H, halo, alkyl, alkoxy; A = O, S(O)<sub>n</sub> (wherein n = 0, 1, 2), NHNH, NH, NMe; m = 0, 1], which show excellent herbicidal activity for weeds of rice paddy such as Echinochloa crus-galli, broad leaf weeds, and Scirpus juncoides, are prepared A herbicide composition contains I as the active ingredient. Thus, 2-hydroxy-5,6-diphenylpyrazine was slowly added dropwise to a suspension of NaH in DMF under ice-cooling followed by adding Et bromoacetate dropwise and the resulting mixture was stirred at room temperature for 1.5 h to give 100% Et (5,6-diphenyl-2-pyrazinyloxy)acetate (II). II at 50 g/a are inhibited the growth of E. crus-galli, broad leaf weed, Eleocharis acicularis, Cyperus serotinus, Eleocharis kuroguwai, and S. juncoides by 91-100% in potted paddy soil, whereas rice seedlings were not damaged.

IT	162929-09-1P, 5,6-Diphenyl-2-pyrazinyloxyacetyl chloride
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (intermediate for preparation of diphenylpyrazine derivs. as herbicides)
RN	162929-09-1 CAPLUS
CN	Acetyl chloride, [(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



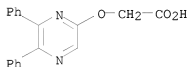
IT	162928-97-1P	162927-98-2P	162927-99-3P
	162928-00-9P	162928-01-0P	162928-02-1P
	162928-03-2P	162928-04-3P	162928-05-4P
	162928-06-5P	162928-07-6P	162928-08-7P
	162928-09-8P	162928-10-1P	162928-11-2P
	162928-12-3P	162928-13-4P	162928-20-3P
	162928-27-0P	162928-28-1P	162928-29-2P
	162928-30-5P	162928-31-6P	162928-32-7P
	162928-33-8P	162928-34-9P	162928-35-0P
	162928-36-1P	162928-37-2P	162928-38-3P
	162928-39-4P	162928-40-7P	162928-41-8P
	162928-42-9P	162928-43-0P	162928-44-1P
	162928-45-2P	162928-46-3P	162928-47-4P
	162928-48-5P	162928-49-6P	162928-50-9P
	162928-51-0P	162928-52-1P	162928-53-2P
	162928-54-3P	162928-55-4P	162928-56-5P

162928-57-6P 162928-58-7P 162928-59-8P  
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 162928-65-6P 162928-68-9P 162928-69-0P  
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 162928-76-9P 162928-77-0P 162928-78-1P  
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 162928-91-8P 162928-92-9P 162928-93-0P  
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 162928-97-4P 162928-98-5P 162928-99-6P  
 162929-00-2P 162929-01-3P 162929-02-4P  
 162929-03-5P 162929-04-6P 162929-05-7P  
 162929-06-8P 162929-07-9P 162929-08-0P

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation of diphenylpyrazine derivs. as herbicides)

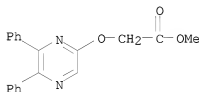
RN 162927-97-1 CAPLUS

CN Acetic acid, [(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



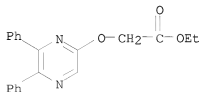
RN 162927-98-2 CAPLUS

CN Acetic acid, [(5,6-diphenylpyrazinyl)oxy]-, methyl ester (9CI) (CA INDEX NAME)



RN 162927-99-3 CAPLUS

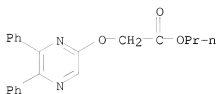
CN Acetic acid, [(5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI) (CA INDEX NAME)



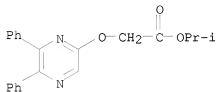
RN 162928-00-9 CAPLUS

CN Acetic acid, [(5,6-diphenylpyrazinyl)oxy]-, propyl ester (9CI) (CA INDEX NAME)

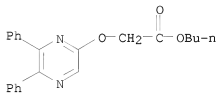




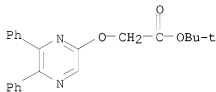
RN 162928-01-0 CAPLUS  
 CN Acetic acid, [(5,6-diphenylpyrazinyl)oxy]-, 1-methylethyl ester (9CI) (CA INDEX NAME)



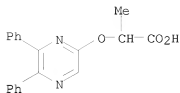
RN 162928-02-1 CAPLUS  
 CN Acetic acid, [(5,6-diphenylpyrazinyl)oxy]-, butyl ester (9CI) (CA INDEX NAME)



RN 162928-03-2 CAPLUS  
 CN Acetic acid, [(5,6-diphenylpyrazinyl)oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

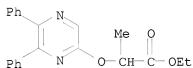


RN 162928-04-3 CAPLUS  
 CN Propanoic acid, 2-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



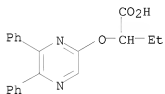
RN 162928-05-4 CAPLUS

CN Propanoic acid, 2-[(5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI) (CA INDEX NAME)



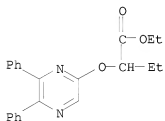
RN 162928-06-5 CAPLUS

CN Butanoic acid, 2-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



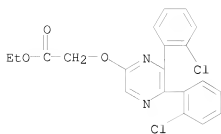
RN 162928-07-6 CAPLUS

CN Butanoic acid, 2-[(5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI) (CA INDEX NAME)



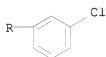
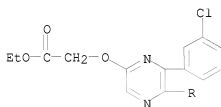
RN 162928-08-7 CAPLUS

CN Acetic acid, [[5,6-bis(2-chlorophenyl)pyrazinyl]oxy]-, ethyl ester (9CI) (CA INDEX NAME)



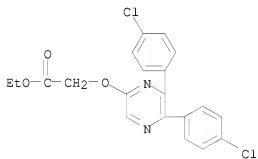
RN 162928-09-8 CAPLUS

CN Acetic acid, [[5,6-bis(3-chlorophenyl)pyrazinyl]oxy]-, ethyl ester (9CI)  
(CA INDEX NAME)



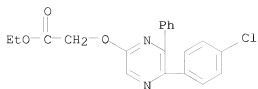
RN 162928-10-1 CAPLUS

CN Acetic acid, [[5,6-bis(4-chlorophenyl)pyrazinyl]oxy]-, ethyl ester (9CI)  
(CA INDEX NAME)

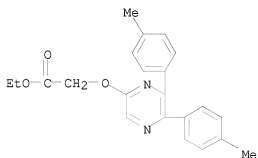


RN 162928-11-2 CAPLUS

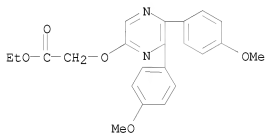
CN Acetic acid, [[5-(4-chlorophenyl)-6-phenylpyrazinyl]oxy]-, ethyl ester  
(9CI) (CA INDEX NAME)



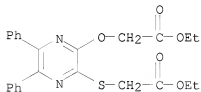
RN 162928-12-3 CAPLUS  
 CN Acetic acid, [[5,6-bis(4-methylphenyl)pyrazinyl]oxy]-, ethyl ester (9CI)  
 (CA INDEX NAME)



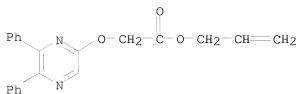
RN 162928-13-4 CAPLUS  
 CN Acetic acid, [[5,6-bis(4-methoxyphenyl)pyrazinyl]oxy]-, ethyl ester (9CI)  
 (CA INDEX NAME)



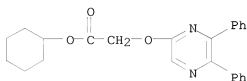
RN 162928-20-3 CAPLUS  
 CN Acetic acid, [[3-(2-ethoxy-2-oxoethoxy)-5,6-diphenylpyrazinyl]thio]-,  
 ethyl ester (9CI) (CA INDEX NAME)



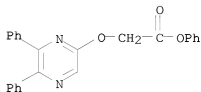
RN 162928-27-0 CAPLUS  
 CN Acetic acid, [[5,6-diphenylpyrazinyl]oxy]-, 2-propenyl ester (9CI) (CA  
 INDEX NAME)



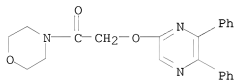
RN 162928-28-1 CAPLUS  
 CN Acetic acid, [(5,6-diphenylpyrazinyl)oxy]-, cyclohexyl ester (9CI) (CA INDEX NAME)



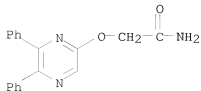
RN 162928-29-2 CAPLUS  
 CN Acetic acid, [(5,6-diphenylpyrazinyl)oxy]-, phenyl ester (9CI) (CA INDEX NAME)



RN 162928-30-5 CAPLUS  
 CN Morpholine, 4-[(5,6-diphenylpyrazinyl)oxy]acetyl]- (9CI) (CA INDEX NAME)

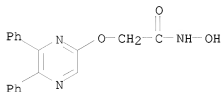


RN 162928-31-6 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



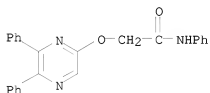
RN 162928-32-7 CAPLUS

CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-hydroxy- (9CI) (CA INDEX NAME)



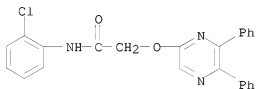
RN 162928-33-8 CAPLUS

CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-phenyl- (9CI) (CA INDEX NAME)



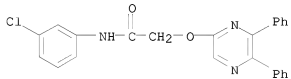
RN 162928-34-9 CAPLUS

CN Acetamide, N-(2-chlorophenyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



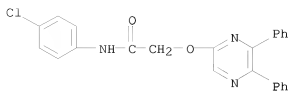
RN 162928-35-0 CAPLUS

CN Acetamide, N-(3-chlorophenyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)

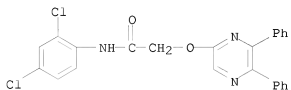


RN 162928-36-1 CAPLUS

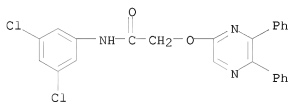
CN Acetamide, N-(4-chlorophenyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



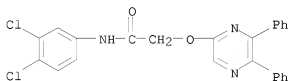
RN 162928-37-2 CAPLUS  
 CN Acetamide, N-(2,4-dichlorophenyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI)  
 (CA INDEX NAME)



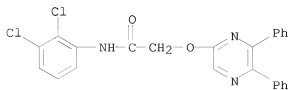
RN 162928-38-3 CAPLUS  
 CN Acetamide, N-(3,5-dichlorophenyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI)  
 (CA INDEX NAME)



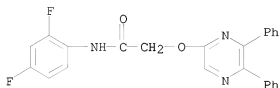
RN 162928-39-4 CAPLUS  
 CN Acetamide, N-(3,4-dichlorophenyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI)  
 (CA INDEX NAME)



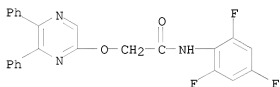
RN 162928-40-7 CAPLUS  
 CN Acetamide, N-(2,3-dichlorophenyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI)  
 (CA INDEX NAME)



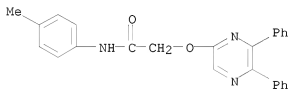
RN 162928-41-8 CAPLUS  
 CN Acetamide, N-(2,4-difluorophenyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI)  
 (CA INDEX NAME)



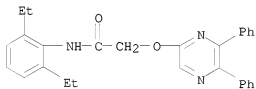
RN 162928-42-9 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-(2,4,6-trifluorophenyl)- (9CI)  
 (CA INDEX NAME)



RN 162928-43-0 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-(4-methylphenyl)- (9CI) (CA  
 INDEX NAME)

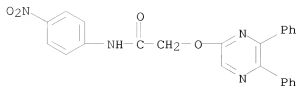


RN 162928-44-1 CAPLUS  
 CN Acetamide, N-(2,6-diethylphenyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI)  
 (CA INDEX NAME)

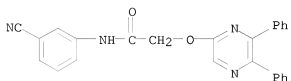


RN 162928-45-2 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-(4-nitrophenyl)- (9CI) (CA  
 INDEX NAME)

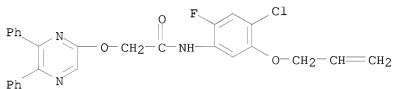




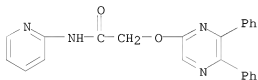
RN 162928-46-3 CAPLUS  
 CN Acetamide, N-(3-cyanophenyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



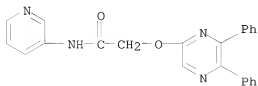
RN 162928-47-4 CAPLUS  
 CN Acetamide, N-[4-chloro-2-fluoro-5-(2-propenyloxy)phenyl]-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



RN 162928-48-5 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-2-pyridinyl- (9CI) (CA INDEX NAME)

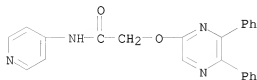


RN 162928-49-6 CAPLUS  
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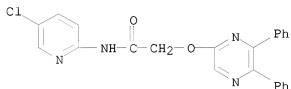


RN 162928-50-9 CAPLUS

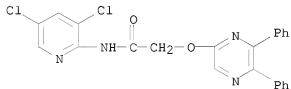
CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-4-pyridinyl- (9CI) (CA INDEX NAME)



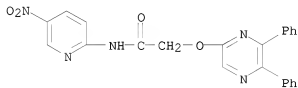
RN 162928-51-0 CAPLUS  
CN Acetamide, N-(5-chloro-2-pyridinyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI)  
(CA INDEX NAME)



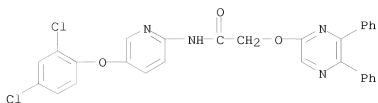
RN 162928-52-1 CAPLUS  
CN Acetamide, N-(3,5-dichloro-2-pyridinyl)-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



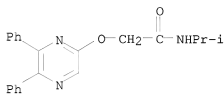
RN 162928-53-2 CAPLUS  
CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-(5-nitro-2-pyridinyl)- (9CI)  
(CA INDEX NAME)



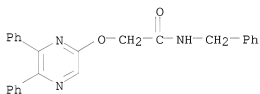
RN 162928-54-3 CAPLUS  
CN Acetamide, N-[5-(2,4-dichlorophenoxy)-2-pyridinyl]-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



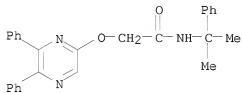
RN 162928-55-4 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-(1-methylethyl)- (9CI) (CA INDEX NAME)



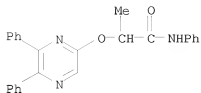
RN 162928-56-5 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-(phenylmethyl)- (9CI) (CA INDEX NAME)



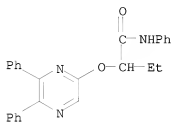
RN 162928-57-6 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-(1-methyl-1-phenylethyl)- (9CI) (CA INDEX NAME)



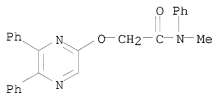
RN 162928-58-7 CAPLUS  
 CN Propanamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-phenyl- (9CI) (CA INDEX NAME)



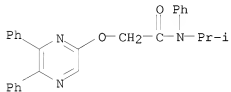
RN 162928-59-8 CAPLUS  
 CN Butanamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-phenyl- (9CI) (CA INDEX NAME)



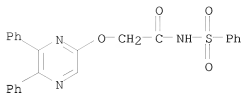
RN 162928-60-1 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-methyl-N-phenyl- (9CI) (CA INDEX NAME)



RN 162928-61-2 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-(1-methylethyl)-N-phenyl- (9CI) (CA INDEX NAME)

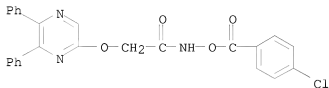


RN 162928-64-5 CAPLUS  
 CN Acetamide, 2-[(5,6-diphenylpyrazinyl)oxy]-N-(phenylsulfonyl)- (9CI) (CA INDEX NAME)



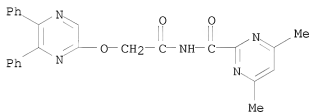
RN 162928-65-6 CAPLUS

CN Acetamide, N-[(4-chlorobenzoyl)oxy]-2-[(5,6-diphenylpyrazinyl)oxy]- (9CI)  
(CA INDEX NAME)



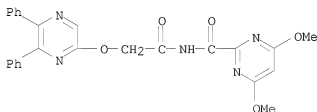
RN 162928-68-9 CAPLUS

CN 2-Pyrimidinecarboxamide, N-[(5,6-diphenylpyrazinyl)oxy]acetyl-4,6-dimethyl- (9CI) (CA INDEX NAME)



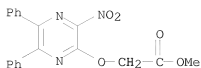
RN 162928-69-0 CAPLUS

CN 2-Pyrimidinecarboxamide, N-[(5,6-diphenylpyrazinyl)oxy]acetyl-4,6-dimethoxy- (9CI) (CA INDEX NAME)

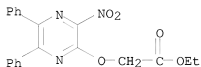


RN 162928-70-3 CAPLUS

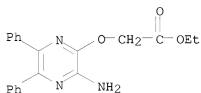
CN Acetic acid, [(3-nitro-5,6-diphenylpyrazinyl)oxy]-, methyl ester (9CI)  
(CA INDEX NAME)



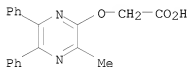
RN 162928-71-4 CAPLUS  
 CN Acetic acid, [(3-nitro-5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI) (CA INDEX NAME)



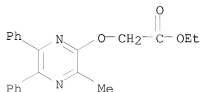
RN 162928-72-5 CAPLUS  
 CN Acetic acid, [(3-amino-5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI) (CA INDEX NAME)



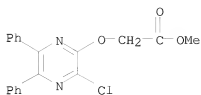
RN 162928-73-6 CAPLUS  
 CN Acetic acid, [(3-methyl-5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



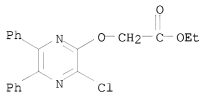
RN 162928-74-7 CAPLUS  
 CN Acetic acid, [(3-methyl-5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI) (CA INDEX NAME)



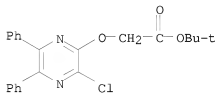
RN 162928-75-8 CAPLUS  
 CN Acetic acid, [(3-chloro-5,6-diphenylpyrazinyl)oxy]-, methyl ester (9CI) (CA INDEX NAME)



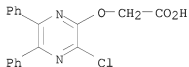
RN 162928-76-9 CAPLUS  
 CN Acetic acid, [(3-chloro-5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI)  
 (CA INDEX NAME)



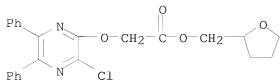
RN 162928-77-0 CAPLUS  
 CN Acetic acid, [(3-chloro-5,6-diphenylpyrazinyl)oxy]-, 1,1-dimethylethyl ester (9CI)  
 (CA INDEX NAME)



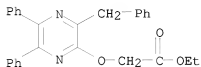
RN 162928-78-1 CAPLUS  
 CN Acetic acid, [(3-chloro-5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



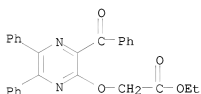
RN 162928-79-2 CAPLUS  
 CN Acetic acid, [(3-chloro-5,6-diphenylpyrazinyl)oxy]-, (tetrahydro-2-furanyl)methyl ester (9CI) (CA INDEX NAME)



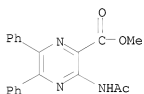
RN 162928-80-5 CAPLUS  
 CN Acetic acid, [[5,6-diphenyl-3-(phenylmethyl)pyrazinyl]oxy]-, ethyl ester (9CI) (CA INDEX NAME)



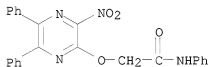
RN 162928-81-6 CAPLUS  
 CN Acetic acid, [(3-benzoyl-5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI) (CA INDEX NAME)



RN 162928-82-7 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-(acetylamino)-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)

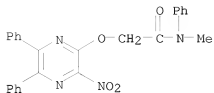


RN 162928-83-8 CAPLUS  
 CN Acetamide, 2-[(3-nitro-5,6-diphenylpyrazinyl)oxy]-N-phenyl- (9CI) (CA INDEX NAME)



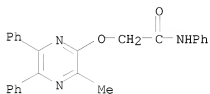
RN 162928-84-9 CAPLUS  
 CN Acetamide, N-methyl-2-[(3-nitro-5,6-diphenylpyrazinyl)oxy]-N-phenyl- (9CI) (CA INDEX NAME)





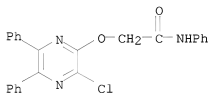
RN 162928-85-0 CAPLUS

CN Acetamide, 2-[(3-methyl-5,6-diphenylpyrazinyl)oxy]-N-phenyl- (9CI) (CA INDEX NAME)



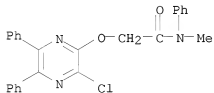
RN 162928-86-1 CAPLUS

CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-phenyl- (9CI) (CA INDEX NAME)



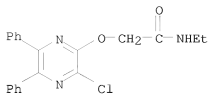
RN 162928-87-2 CAPLUS

CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-methyl-N-phenyl- (9CI) (CA INDEX NAME)

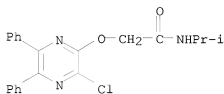


RN 162928-88-3 CAPLUS

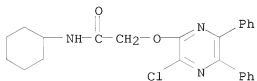
CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-ethyl- (9CI) (CA INDEX NAME)



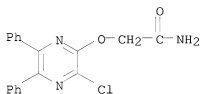
RN 162928-89-4 CAPLUS  
 CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-(1-methylethyl)-  
 (9CI) (CA INDEX NAME)



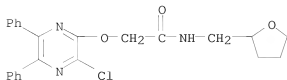
RN 162928-90-7 CAPLUS  
 CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-cyclohexyl- (9CI)  
 (CA INDEX NAME)



RN 162928-91-8 CAPLUS  
 CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)

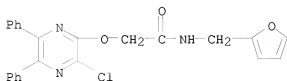


RN 162928-92-9 CAPLUS  
 CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-[(tetrahydro-2-furanyl)methyl]- (9CI) (CA INDEX NAME)



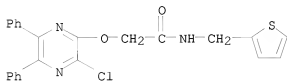
RN 162928-93-0 CAPLUS

CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-(2-furanylmethyl)-  
(9CI) (CA INDEX NAME)



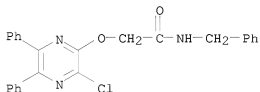
RN 162928-94-1 CAPLUS

CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-(2-thienylmethyl)-  
(9CI) (CA INDEX NAME)



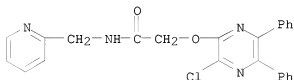
RN 162928-95-2 CAPLUS

CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-(phenylmethyl)- (9CI)  
(CA INDEX NAME)



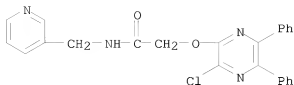
RN 162928-96-3 CAPLUS

CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-(2-pyridinylmethyl)-  
(9CI) (CA INDEX NAME)

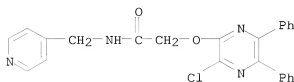


RN 162928-97-4 CAPLUS

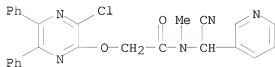
CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-(3-pyridinylmethyl)-  
(9CI) (CA INDEX NAME)



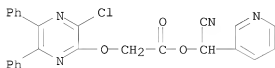
RN 162928-98-5 CAPLUS  
 CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-(4-pyridinylmethyl)-  
 (9CI) (CA INDEX NAME)



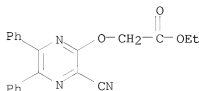
RN 162928-99-6 CAPLUS  
 CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-(cyano-3-  
 pyridinylmethyl)-N-methyl- (9CI) (CA INDEX NAME)



RN 162929-00-2 CAPLUS  
 CN Acetic acid, [(3-chloro-5,6-diphenylpyrazinyl)oxy]-, cyano-3-  
 pyridinylmethyl ester (9CI) (CA INDEX NAME)

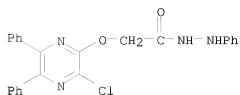


RN 162929-01-3 CAPLUS  
 CN Acetic acid, [(3-cyano-5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI) (CA  
 INDEX NAME)



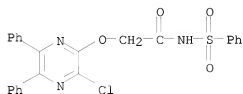
RN 162929-02-4 CAPLUS  
 CN Acetic acid, [(3-chloro-5,6-diphenylpyrazinyl)oxy]-, 2-phenylhydrazide

(9CI) (CA INDEX NAME)



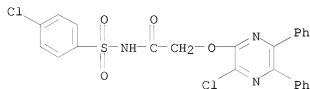
RN 162929-03-5 CAPLUS

CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-(phenylsulfonyl)-  
(9CI) (CA INDEX NAME)



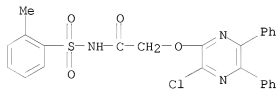
RN 162929-04-6 CAPLUS

CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-[(4-chlorophenyl)sulfonyl]- (9CI) (CA INDEX NAME)



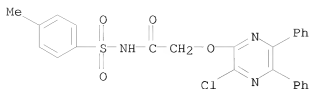
RN 162929-05-7 CAPLUS

CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-[(2-methylphenyl)sulfonyl]- (9CI) (CA INDEX NAME)

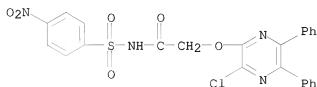


RN 162929-06-8 CAPLUS

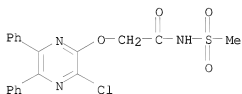
CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-[(4-methylphenyl)sulfonyl]- (9CI) (CA INDEX NAME)



RN 162929-07-9 CAPLUS  
 CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-[(4-nitrophenyl)sulfonyl]- (9CI) (CA INDEX NAME)



RN 162929-08-0 CAPLUS  
 CN Acetamide, 2-[(3-chloro-5,6-diphenylpyrazinyl)oxy]-N-(methylsulfonyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 175 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:450970 CAPLUS  
 DOCUMENT NUMBER: 122:214787

TITLE: Preparation and properties of novel soluble poly(aryl ether)s bearing covalently bound tetrapyrazinoporphyrazine units

AUTHOR(S): Yang, Haixin; Sargent, Jonathan R.; Hay, Allan S.  
 CORPORATE SOURCE: Dep. of Chemistry, McGill Univ., Montreal, QC, H3A 2K6, Can.

SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (1995), 33(6), 989-97  
 CODEN: JPACEC; ISSN: 0887-624X

PUBLISHER: Wiley  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

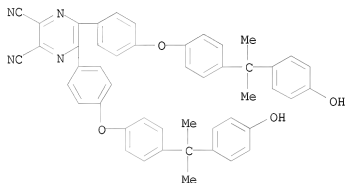
AB Thermooxidatively stable amorphous poly(dicyanopyrazine ether)s with high glass transition temps. were synthesized and converted into poly(aryl ether)s bearing covalently bound zinc (II) 2,3,9,10,16,17,23,24-octaphenyltetrapyrazinoporphyrazine units. The polyethers are soluble in common organic solvents and can be cast into strong and flexible films. The maximum absorption wavelength of the poly(aryl ether)s bearing zinc(II) 2,3,9,10,16,17,23,24-octaphenyltetrapyrazinoporphyrazine units in chloroform is 654 nm.  
 IT 162193-56-8DP, zinc pyrazinoporphyrazine derivs.  
 162193-57-9DP, zinc pyrazinoporphyrazine derivs.

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and UV absorption of poly(dicyanopyrazine ether) containing covalently bound zinc pyrazinoporphyrazine)

RN 162193-56-8 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[4-[1-(4-hydroxyphenyl)-1-methylethyl]phenoxy]phenyl]-, polymer with 1,1'-sulfonylbis[4-fluorobenzene] (9CI) (CA INDEX NAME)

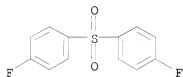
CM 1

CRN 162193-55-7  
 CMF C48 H38 N4 O4

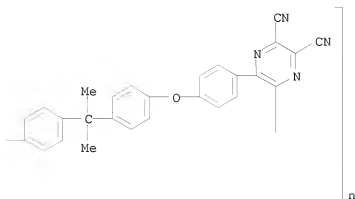
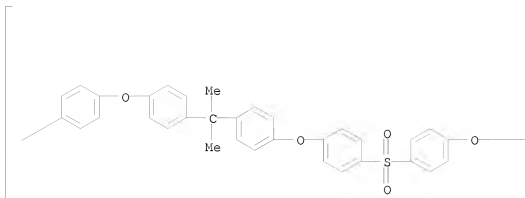


CM 2

CRN 383-29-9  
 CMF C12 H8 F2 O2 S

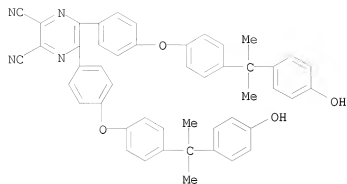


RN 162193-57-9 CAPLUS  
 CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)



IT 162193-55-7P 162193-56-8P 162193-57-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation poly(dicyanopyrazine ether) and polymerization and  
 post-treatment to  
 obtain covalently bound zinc pyrazinoporphyrazine)  
 RN 162193-55-7 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(4-[1-(4-hydroxyphenyl)-1-  
 methylethyl]phenoxy]phenyl]- (CA INDEX NAME)





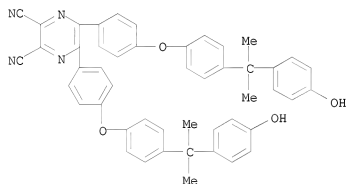
RN 162193-56-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[4-[1-(4-hydroxyphenyl)-1-methylethyl]phenoxy]phenyl]-, polymer with 1,1'-sulfonylbis[4-fluorobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 162193-55-7

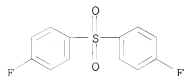
CMF C48 H38 N4 O4



CM 2

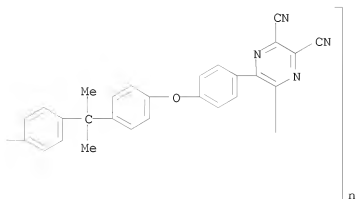
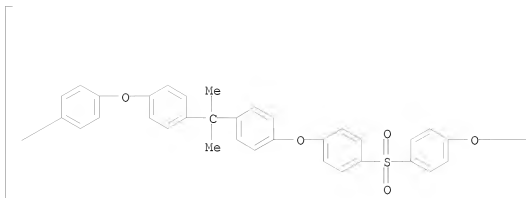
CRN 383-29-9

CMF C12 H8 F2 O2 S



RN 162193-57-9 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)



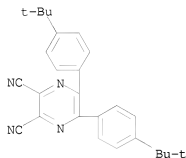
L14 ANSWER 176 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:297129 CAPLUS  
 DOCUMENT NUMBER: 122:95279  
 TITLE: Octa-(4-tert-butylphenyl)-tetrapyrazinoporphyrazine  
 and its metal complexes  
 AUTHOR(S): Freyer, Wolfgang  
 CORPORATE SOURCE: Max-Born-Inst. Nichtlineare Optik  
 Kurzzeitspektroskopie, Berlin, Germany  
 SOURCE: Journal fuer Praktische Chemie/Chemiker-Zeitung  
 (1994), 336(8), 690-2  
 CODEN: JPCCEM; ISSN: 0941-1216  
 PUBLISHER: Barth  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 AB Octa(4-tert-butylphenyl)tetrapyrazinoporphyrazine and its copper and zinc  
 complexes were prepared The absorption spectra for the free and complexed  
 species were recorded, as well as the fluorescence spectra of the free  
 species in benzene and DMSO. These complexes have potential applications  
 as photodynamic sensitizers for tumor therapy.  
 IT 144828-31-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

(for preparation of octa(tert-butylphenyl)tetrapyrazinoporphyrazine and its copper and zinc complexes)

RN 144828-31-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



L14 ANSWER 177 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:61681 CAPLUS

DOCUMENT NUMBER: 122:20995

TITLE: Octakis(alkoxy phenyl)tetrapyradinoporphyrazine and discotic liquid crystal composition containing same

Yamamoto, Iwao; Oota, Kazuchika

INVENTOR(S): Iisutan KK, Japan

PATENT ASSIGNEE(S): Jpn. Kokai Tokkyo Koho, 8 pp.

SOURCE: CODEN: JKXXAF

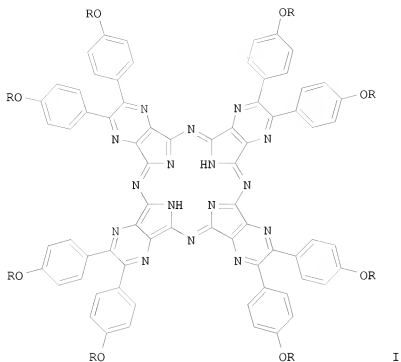
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 06100566	A	19940412	JP 1992-273443	19920918
PRIORITY APPLN. INFO.:			JP 1992-273443	19920918
OTHER SOURCE(S):	MARPAT	122:20995		
GI				



I

AB The title compound has a formula I (R = C1-30 straight chain alkyl, or 2-ethylhexyl-branched alkyl), which is able to form transition metal complexes. The liquid crystal composition contains  $\geq 1$  the above compound or complexes.

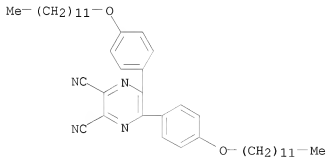
IT 159254-45-2P 159254-47-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, tetrapyradinoporphyrazine transition metal complex from)

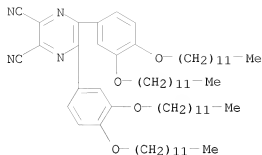
RN 159254-45-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dodecyloxy)phenyl]- (CA INDEX NAME)



RN 159254-47-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(dodecyloxy)phenyl]- (CA INDEX NAME)



L14 ANSWER 178 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:1871 CAPLUS

DOCUMENT NUMBER: 122:292077

TITLE: Structure-property relationships in PMR-15-type polyimide resins: III. New polyimides incorporating triazoles, quinoxalines, pyridopyrazines and pyrazinopyridazines

AUTHOR(S): Jigajinni, V B.; Preston, P N.; Shah, V K.; Simpson, S W.; Soutar, I.; Stewart, N J.

CORPORATE SOURCE: Dep. Chem., Heriot-Watt Univ., Riccarton Edinburgh, EH14 4AS, UK

SOURCE: High Performance Polymers (1993), 5(3), 239-57

CODEN: HPPQEX; ISSN: 0954-0083

DOCUMENT TYPE: Journal

LANGUAGE: English

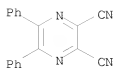
AB Polyimide oligomers (prepolymers) and resins of the PMR-15 type were prepared from 5-norbornene-2,3-dicarboxylic half acid ester, 3,3',4,4'-benzophenonetetracarboxylic diester and a series of diamines incorporating 1,2,3-triazole, quinoxaline, pyrido[2,3-b]pyrazine, pyrido[3,4-b]pyrazine, benzo[g]quinoxaline, pyrazino[2,3-d]pyridazine, and bis(pyrido[3,4-b]pyrazino)benzene ring systems. Two tetraamines in the bis(pyrazino[2,3-d]pyridazino)benzene ring system were also employed. Selected diamine monomers from the above ring systems provide PMR-15-analog resins of higher thermal and thermooxidative stability than PMR-15 itself. The phys. behavior during oligomerization and curing of PMR systems was studied by dynamic mech. thermal anal. Traces akin to that from PMR-15 are obtained using certain diamine monomers (e.g. triazole and pyrido[3,4-b]pyrazine containing) but a featureless thermogram is observed using tetraamines in the bis(pyrazino[2,3-d]pyridazino)benzene system.

IT 52197-23-6P, 2,3-Dicyano-5,6-diphenylpyrazine 101579-12-8P, 2,3-Dicyano-5,6-di(4'-bromophenyl)pyrazine 134071-89-9P, 2,3-Dicyano-5,6-di(4'-methoxyphenyl)pyrazine 160904-08-5P, 2,3-Dicyano-5,6-di(3'-nitrophenyl)pyrazine 160904-12-1P, 1,4-Bis[5'-(2',3'-dicyano-6'-(3''-nitrophenyl)pyrazino)]benzene 160904-13-2P, 1,4-Bis[5'-(2',3'-dicyano-6'-phenylpyrazino)]benzene  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; preparation and properties of polyimides incorporating triazoles, quinoxalines, pyridopyrazines and pyrazinopyridazines)

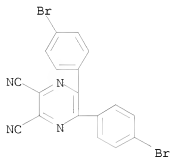
RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



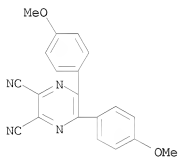
RN 101579-12-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



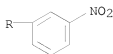
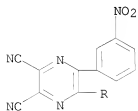
RN 134071-89-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)

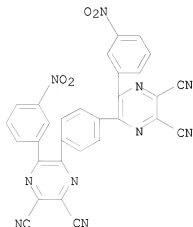


RN 160904-08-5 CAPLUS

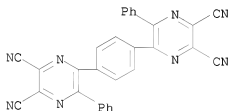
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(3-nitrophenyl)- (CA INDEX NAME)



RN 160904-12-1 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,5'-(1,4-phenylene)bis[6-(3-nitrophenyl)-  
 (CA INDEX NAME)]

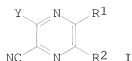


RN 160904-13-2 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,5'-(1,4-phenylene)bis[6-phenyl- (9CI) (CA  
 INDEX NAME)]



L14 ANSWER 179 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1994:483374 CAPLUS  
 DOCUMENT NUMBER: 121:83374  
 TITLE: Preparation of pyrazinecarbonitriles  
 INVENTOR(S): Sato, Nobuhiro; Matsui, Nobuo  
 PATENT ASSIGNEE(S): Nippon Soda Co, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06001776	A	19940111	JP 1992-184600	19920618
PRIORITY APPLN. INFO.:			JP 1992-184600	19920618
OTHER SOURCE(S):			CASREACT 121:83374; MARPAT 121:83374	
GI				



AB The title compds. I [R<sup>1</sup>, R<sup>2</sup> = H, (substituted) alkyl, (substituted) alkenyl, (substituted) alkynyl, (substituted) aryl, (substituted) alkoxy-carbonyl; Y = XR<sup>4</sup>; X = O, NR<sup>5</sup>; R<sup>4</sup> = H, (substituted) alkyl, (substituted) alkenyl, (substituted) alkynyl, (substituted) aryl; if X = O, then R<sup>4</sup> ≠ H; R<sup>5</sup> = H, (substituted) alkyl, (substituted) alkenyl, (substituted) alkynyl], some of which have fluorescent property (no data), are prepared by reaction of I [Y = O<sub>2</sub>SR<sup>3</sup>; R<sup>3</sup> = (substituted) alkyl, (substituted) Ph] with R<sup>4</sup>XH (R<sup>4</sup>, X = same as I). A THF solution of 0.491 g I (R<sup>1</sup> = R<sup>2</sup> = H, Y = O<sub>2</sub>SPh) was treated with aqueous NH<sub>3</sub> and NEt<sub>3</sub> at room temperature

for 6 h to give 0.196 g I (R<sup>1</sup> = R<sup>2</sup> = H, Y = NH<sub>2</sub>).

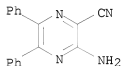
IT 70186-75-3P 75018-08-5P 146779-35-3P  
146779-38-6P 146779-39-7P 146779-40-0P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, from sulfonylpiperazine-carbonitrile)

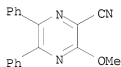
RN 70186-75-3 CAPLUS

CN Pyrazine-carbonitrile, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



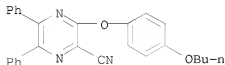
RN 75018-08-5 CAPLUS

CN Pyrazine-carbonitrile, 3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 146779-35-3 CAPLUS

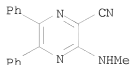
CN Pyrazine-carbonitrile, 3-(4-butoxyphenoxy)-5,6-diphenyl- (9CI) (CA INDEX NAME)



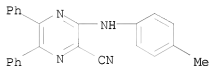
RN 146779-38-6 CAPLUS

CN Pyrazine-carbonitrile, 3-(methylamino)-5,6-diphenyl- (9CI) (CA INDEX NAME)

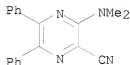




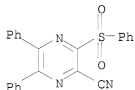
RN 146779-39-7 CAPLUS  
CN Pyrazinecarbonitrile, 3-[(4-methylphenyl)amino]-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 146779-40-0 CAPLUS  
CN Pyrazinecarbonitrile, 3-(dimethylamino)-5,6-diphenyl- (9CI) (CA INDEX NAME)

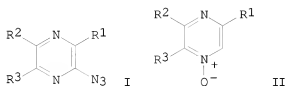


IT 124629-51-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with amine or alc.)  
RN 124629-51-2 CAPLUS  
CN Pyrazinecarbonitrile, 5,6-diphenyl-3-(phenylsulfonyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 180 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1994:483276 CAPLUS  
DOCUMENT NUMBER: 121:83276  
TITLE: Studies on pyrazines. Part 27. A new deoxidative nucleophilic substitution of pyrazine N-oxides; synthesis of azidopyrazines with trimethylsilyl azide  
Sato, Nobuhiro; Miwa, Naoko; Hirokawa, Noriko  
Dep. Chem., Yokohama City Univ., Yokohama, 236, Japan  
Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1994), (7), 885-8  
CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 121:83276  
 GI



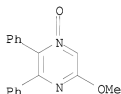
AB Azidopyrazines I (R1 = NH2, OMe, Ph, H, R2 = H, Ph, OMe, R3 = H, Me, Ph) bearing amino, methoxy and/or Ph groups have been synthesized by reaction of pyrazine N-oxides II with trimethylsilyl azide in the presence of diethylcarbamoil chloride in refluxing acetonitrile. In most cases, the azidation occurs only at the carbon  $\alpha$  to the N-oxide function, and 3-substituted pyrazine 1-oxides gave 2-azido-3-substituted pyrazines. Conversely, Me, chloro and methoxycarbonylpyrazine N-oxides did not undergo azidation. The electronic and steric effects of the substituent on the reactivity are discussed.

IT 156331-24-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

RN 156331-24-7 CAPLUS

CN Pyrazine, 5-methoxy-2,3-diphenyl-, 1-oxide (CA INDEX NAME)



L14 ANSWER 181 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:409331 CAPLUS

DOCUMENT NUMBER: 121:9331

TITLE: Synthesis and pharmacological effects of  
 tetramethylpyrazine derivatives

AUTHOR(S): Lee, An rong; Huang, Wen Hsin; Lin, Cheng I.; Loh,  
 Shih Hurng

CORPORATE SOURCE: Sch. Pharm., Natl. Def. Med. Cent., Taipei, Taiwan

SOURCE: Yixue Yanjiu (1992), 13(1), 41-50

CODEN: YIXYE3; ISSN: 1011-4564

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The preparation, physicochem. properties, and pharmacol. effects on the cardiovascular system of eight tetramethylpyrazine (TMP) derivs. are described. Protonation, oxidation, and incorporation of hydrophilic radicals were employed in the chemical modifications, in an attempt to improve the aqueous

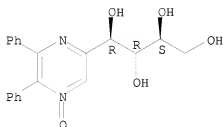
solubility and cardiovascular activity of TMP.

IT 155370-01-7P

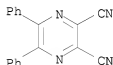
RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and cardiovascular effects of)

RN 155370-01-7 CAPLUS  
CN 1,2,3,4-Butanetetrol, 1-(4-oxido-5,6-diphenylpyrazinyl)-,  
[1R-(1R\*,2R\*,3S\*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

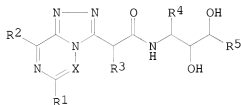


L14 ANSWER 182 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1993:616163 CAPLUS  
DOCUMENT NUMBER: 119:216163  
TITLE: Synthesis and spectral properties of soluble phthal-  
and naphthalocyanine aza analogs  
AUTHOR(S): Galpern, M. G.; Kudrevich, S. V.; Novozhilova, I. G.  
CORPORATE SOURCE: Nauchno-Issled. Inst. Org. Poluprod. Krasitelei,  
Moscow, 103787, Russia  
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (1993), (1),  
58-63  
CODEN: KGSSAQ; ISSN: 0132-6244  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian  
AB Tetra-2,3-(4,5-diphenylpyrazino)porphyrazine (H2L), VOL and VOL1 (H2L1 =  
tetra-2,3-(4-phenylquinolino)porphyrazine) were prepared and characterized  
by electronic spectra.  
IT 52197-23-6, 4,5-Diphenyl-2,3-dicyanopyrazine  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclocondensation of, with urea with and without vanadium chloride)  
RN 52197-23-6 CAPLUS  
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 183 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1993:603443 CAPLUS  
DOCUMENT NUMBER: 119:203443  
TITLE: Preparation of triazoloazineacetamides as renin  
inhibitors  
INVENTOR(S): Stadler, Heinz; Vieira, Eric; Wostl, Wolfgang  
PATENT ASSIGNEE(S): Hoffmann-La Roche, F., AG, Switz.  
SOURCE: Eur. Pat. Appl., 23 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 543245	A1	19930526	EP 1992-119128	19921109
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
CA 2081236	A1	19930424	CA 1991-2081236	19911023
ZA 9208736	A	19930519	ZA 1992-8736	19921112
AU 9228413	A	19930520	AU 1992-28413	19921116
NO 9204423	A	19930520	NO 1992-4423	19921117
CN 1072413	A	19930526	CN 1992-113665	19921118
JP 05239059	A	19930917	JP 1992-331267	19921118
BR 9204459	A	19930525	BR 1992-4459	19921119
PRIORITY APPLN. INFO.:			CH 1991-3374	A 19911119
			CH 1992-2665	A 19920828
OTHER SOURCE(S):	MARPAT 119:203443			
GI				



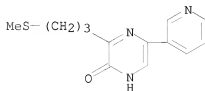
I

AB Title compds. (I; X = N, CH; R1 = Ph, pyridyl, isoquinolinyl; R2 = cycloalkylalkyl, alkylthioalkyl, alkylsulfonylalkyl, alkenyl, alkyl; R3 = H, alkyl, alkenyl, imidazolylmethyl, pyridylmethyl, thiazolylmethyl, PhCH2; R4 = cyclohexylmethyl, PhCH2; R5 = cycloalkyl, alkyl, heterocyclylalkyl), were prepared. Thus, racemic 8-cyclopropyl-6-(3-pyridyl)- $\alpha$ -(3-pyridylmethyl)-S-triazolo[4,3-a]pyrazine-3-acetic acid (preparation given) was condensed with (1S,2R,3S)-3-amino-4-cyclohexyl-1-cyclopropyl 1,2-butanediol using O-benzotriazolyl-N,N,N'-tetramethyluranium hexafluorophosphate and Et3N in MeCN to give N-[(1S,2R,3S)-1-(cyclohexylmethyl)-3-cyclopropyl-2,3-dihydroxypropyl]-8-cyclopropyl-6-(3-pyridyl)- $\alpha$ -(3-pyridylmethyl)-S-triazolo[4,3-a]pyrazine-3-acetamide as a separable mixture of diastereomers. An oral aqueous suspension was prepared containing the  $\alpha$ -(4-thiazolylmethyl) analog of the above compound I inhibited human renin with IC50 = 2.0-150 nM.

IT 150209-46-4P 150209-47-5P 150209-51-1P  
150209-54-4P 150209-55-5P 150209-56-6P  
150209-58-8P 150209-59-9P 150209-62-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as intermediate for renin inhibitor)

RN 150209-46-4 CAPLUS

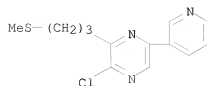
CN 2(1H)-Pyrazine, 3-[3-(methylthio)propyl]-5-(3-pyridinyl)- (CA INDEX NAME)



RN 150209-47-5 CAPLUS

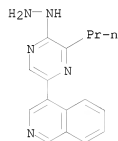
CN Pyrazine, 2-chloro-3-[3-(methylthio)propyl]-5-(3-pyridinyl)- (CA INDEX NAME)

NAME)



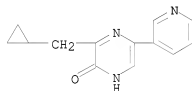
RN 150209-51-1 CAPLUS

CN 2(1H)-Pyrazinone, 5-(4-isoquinolinyl)-3-propyl-, hydrazone (9CI) (CA INDEX NAME)



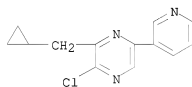
RN 150209-54-4 CAPLUS

CN 2(1H)-Pyrazinone, 3-(cyclopropylmethyl)-5-(3-pyridinyl)- (CA INDEX NAME)



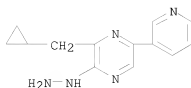
RN 150209-55-5 CAPLUS

CN Pyrazine, 2-chloro-3-(cyclopropylmethyl)-5-(3-pyridinyl)- (CA INDEX NAME)

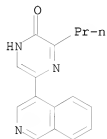


RN 150209-56-6 CAPLUS

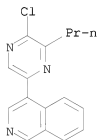
CN 2(1H)-Pyrazinone, 3-(cyclopropylmethyl)-5-(3-pyridinyl)-, hydrazone (9CI) (CA INDEX NAME)



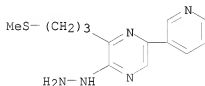
RN 150209-58-8 CAPLUS  
 CN 2(1H)-Pyrazinone, 5-(4-isoquinolinyl)-3-propyl- (CA INDEX NAME)



RN 150209-59-9 CAPLUS  
 CN Isoquinoline, 4-(5-chloro-6-propylpyrazinyl)- (9CI) (CA INDEX NAME)

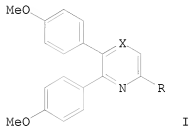


RN 150209-62-4 CAPLUS  
 CN 2(1H)-Pyrazinone, 3-[3-(methylthio)propyl]-5-(3-pyridinyl)-, hydrazone (9CI) (CA INDEX NAME)

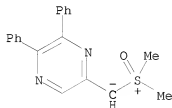


L14 ANSWER 184 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1993:234009 CAPLUS  
 DOCUMENT NUMBER: 118:234009  
 TITLE: Studies on as-triazine derivatives. XIX. Synthesis of 2,3-diarylpyrazine and 2,3-diarylpyridine derivatives as blood platelet aggregation inhibitors  
 AUTHOR(S): Konno, Shoetsu; Matsuya, Yuji; Kumazawa, Minako;

AMANO, Masaki; KOKUBO, Takeshi; SAGI, Mataichi;  
 YAMANAKA, Hiroshi  
 Pharm. Inst., Tohoku Univ., Sendai, 980, Japan  
 YAKUGAKU ZASSHI (1993), 113(1), 40-52  
 CODEN: YKKZAJ; ISSN: 0031-6903  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese  
 GI

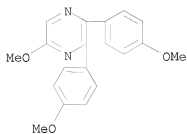


AB 4,5-Diphenyl-2-ethoxypyrimidine, 3,4-diphenyl-6-ethoxypyridazine, and 2,3-diphenyl-5-ethoxypyrazine were evaluated for inhibitory activity towards arachidonic acid-induced aggregation of rabbit blood platelet in vitro. 2,3-Diphenyl-5-ethoxypyrazine exhibited significant inhibitory activity. Various 5-substituted 2,3-bis(4-methoxyphenyl)pyrazines I (X = N R = OMe, OEt OPr, OBu, OC<sub>5</sub>H<sub>11</sub>-n, OCHMe<sub>2</sub>, OCH<sub>2</sub>CHMe<sub>2</sub>, OCH<sub>2</sub>R<sub>1</sub>, SEt, SMe, NH<sub>2</sub>Et, piperidino, N-methylpiperazino, R<sub>1</sub> = cyclopropyl) were synthesized by the nucleophilic substitution reaction of 5-chloro-2,3-bis(4-methoxyphenyl)pyrazine. In a similar manner, substituted 2,3-bis(4-methoxyphenyl)pyridines I (X = CH, R as above) were prepared from 2,3-bis(4-methoxyphenyl)-6-methylsulfonylpyridine, which was synthesized by the cycloaddn.-retro Diels-Alder reaction of 5,6-bis(4-methoxyphenyl)-3-methylsulfonyl-1,2,4-triazine with norbornadiene. Among the compds. prepared, I (X = N, R = OCHMe<sub>2</sub>) showed the most potent inhibitory activity, which was more than the activity of anitrazafen.  
 IT 80602-11-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (ethoxycarbonylation of)  
 RN 80602-11-5 CAPLUS  
 CN Sulfoxonium, dimethyl-, (5,6-diphenylpyrazinyl)methylide (9CI) (CA INDEX NAME)

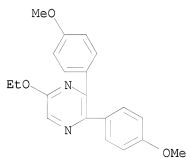


IT 147593-54-2P 147593-55-3P 147593-56-4P  
 147593-57-5P 147593-58-6P 147593-59-7P  
 147593-60-0P 147593-61-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and blood platelet aggregation inhibition by)

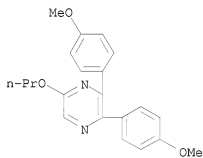
RN 147593-54-2 CAPLUS  
CN Pyrazine, 5-methoxy-2,3-bis(4-methoxyphenyl)- (CA INDEX NAME)



RN 147593-55-3 CAPLUS  
CN Pyrazine, 5-ethoxy-2,3-bis(4-methoxyphenyl)- (CA INDEX NAME)

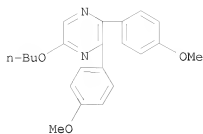


RN 147593-56-4 CAPLUS  
CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-propoxy- (CA INDEX NAME)



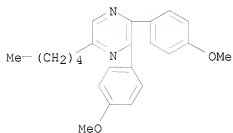
RN 147593-57-5 CAPLUS  
CN Pyrazine, 5-butoxy-2,3-bis(4-methoxyphenyl)- (CA INDEX NAME)





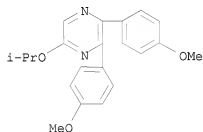
RN 147593-58-6 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-pentyl- (CA INDEX NAME)



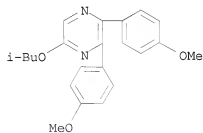
RN 147593-59-7 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-(1-methylethoxy)- (CA INDEX NAME)



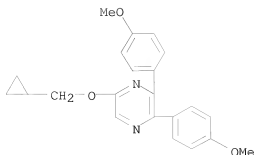
RN 147593-60-0 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-(2-methylpropoxy)- (CA INDEX NAME)

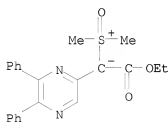


RN 147593-61-1 CAPLUS

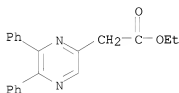
CN Pyrazine, 5-(cyclopropylmethoxy)-2,3-bis(4-methoxyphenyl)- (CA INDEX NAME)



IT 147593-52-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and conversion to Et diphenylpyrazineacetate)  
 RN 147593-52-0 CAPLUS  
 CN Sulfoxonium, dimethyl-, 1-(5,6-diphenylpyrazinyl)-2-ethoxy-2-oxoethylidene  
 (9CI) (CA INDEX NAME)

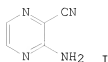


IT 147593-53-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 147593-53-1 CAPLUS  
 CN Pyrazineacetic acid, 5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



L14 ANSWER 185 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1993:191690 CAPLUS  
 DOCUMENT NUMBER: 118:191690  
 TITLE: Studies on pyrazines. 24. A simple and versatile  
 synthetic method for 3-alkoxy- and  
 3-aminopyrazinecarbonitriles  
 Sato, Nobuhiro; Matsui, Nobuo  
 AUTHOR(S): Dep. Chem., Yokohama City Univ., Yokohama, 236, Japan  
 CORPORATE SOURCE: Journal of Heterocyclic Chemistry (1992), 29(7),  
 SOURCE: 1689-92  
 CODEN: JHTCAD; ISSN: 0022-152X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 118:191690

GI

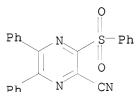


AB New and concise synthetic methods of 3-alkoxy- and 3-aminopyrazinecarbonitriles by nucleophilic displacement of 3-(phenylsulfonyl)-2-pyrazinecarbonitriles are reported. Amination/aromatic nucleophilic substitution of 3-(phenylsulfonyl)-2-pyrazinecarbonitrile with ammonium hydroxide gave 3-amino-2-pyrazinecarbonitrile (I) (82% yield); I is an intermediate for pteridine compds.

IT 124629-51-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (alkoxylation/substitution or amination/substitution reaction of)

RN 124629-51-2 CAPLUS

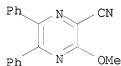
CN Pyrazinecarbonitrile, 5,6-diphenyl-3-(phenylsulfonyl)- (9CI) (CA INDEX NAME)



IT 75018-08-5P 146779-35-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, by alkoxylation of phenylsulfonyl derivative)

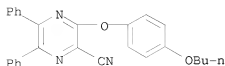
RN 75018-08-5 CAPLUS

CN Pyrazinecarbonitrile, 3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 146779-35-3 CAPLUS

CN Pyrazinecarbonitrile, 3-(4-butoxyphenoxy)-5,6-diphenyl- (9CI) (CA INDEX NAME)



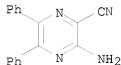
IT 70186-75-3P 146779-38-6P 146779-39-7P

146779-40-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, by amination of phenylsulfonyl derivative)

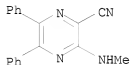
RN 70186-75-3 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



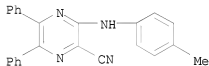
RN 146779-38-6 CAPLUS

CN Pyrazinecarbonitrile, 3-(methylamino)-5,6-diphenyl- (9CI) (CA INDEX NAME)



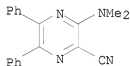
RN 146779-39-7 CAPLUS

CN Pyrazinecarbonitrile, 3-[(4-methylphenyl)amino]-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 146779-40-0 CAPLUS

CN Pyrazinecarbonitrile, 3-(dimethylamino)-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 186 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1993:22088 CAPLUS

DOCUMENT NUMBER: 118:22088

TITLE: Preparation of octakis(alkylphenyl)tetrapyrazinoporphy  
rins as neoplasm inhibitors

INVENTOR(S): Freyer, Wolfgang

PATENT ASSIGNEE(S): Zentralinstitut fuer Optik und Spektroskopie, Germany

SOURCE: Ger. Offen., 4 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

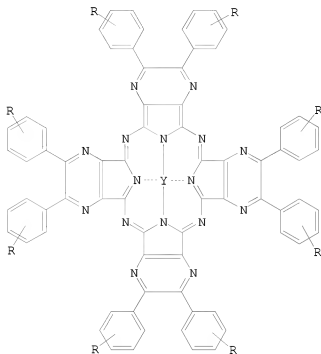
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4109595	A1	19920924	DE 1991-4109595	19910320
PRIORITY APPLN. INFO.:			DE 1991-4109595	19910320
OTHER SOURCE(S):	MARPAT	118:22088		

GI



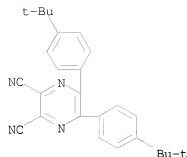
AB Title compds. [I; R = (cyclo)alkyl; Y = 2H, metal ion] were prepared as neoplasm inhibitors (no data). Thus, 5,6-bis(4-tert-butylphenyl)-2,3-dicyanopyrazine was refluxed 4 h with Zn(OAc)<sub>2</sub> as ZnCl<sub>2</sub> to give I (R = 4-CMe<sub>3</sub>, Y = Zn<sup>2+</sup>).

IT 144828-31-9

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, in preparation of octakis(alkylphenyl)tetrapyrazinoporphyrin  
neoplasm inhibitor)

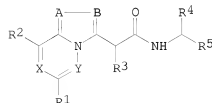
RN 144828-31-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1,1-dimethylethyl)phenyl]- (CA  
INDEX NAME)



L14 ANSWER 187 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1992:531556 CAPLUS  
 DOCUMENT NUMBER: 117:131556  
 TITLE: Preparation of heterocyclic amino acid derivatives as renin inhibitors  
 INVENTOR(S): Branca, Quirico; Heitz, Marie Paule; Mueller, Marcel; Neidhart, Werner; Stadler, Heinz; Vieira, Eric; Wostl, Wolfgang  
 PATENT ASSIGNEE(S): Hoffmann-La Roche, F., A.-G., Switz.  
 SOURCE: Eur. Pat. Appl., 30 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 464572	A2	19920108	EP 1991-110400	19910624
EP 464572	A3	19921007		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
CA 2044564	A1	19911229	CA 1991-2044564	19910613
ZA 9104808	A	19920325	ZA 1991-4808	19910621
AU 9179278	A	19920102	AU 1991-79278	19910624
AU 642021	B2	19931007		
HU 61299	A2	19921228	HU 1991-2097	19910624
JP 04230380	A	19920819	JP 1991-180581	19910626
NO 9102537	A	19911230	NO 1991-2537	19910627
FI 9103179	A	19911229	FI 1991-3179	19910628
BR 9102730	A	19920204	BR 1991-2730	19910628
US 5278161	A	19940111	US 1992-971787	19921105
PRIORITY APPLN. INFO.:			CH 1990-2159	A 19900628
			US 1991-718071	B1 19910620
OTHER SOURCE(S):	MARPAT 117:131556			
GI				



AB The title compds. [I; R1 = Ph, pyridyl, thienyl; R2 = alkyl, aralkyl; R3 = H, alkyl, imidazolylmethyl, etc.; R4 = cyclohexylmethyl, benzyl, isobutyl; R5 = hydroxyalkyl; A, B, X, Y = N, CH; with provisos] and their stereoisomers and pharmaceutically acceptable salts, useful for treatment of high blood pressure and heart insufficiency, were prepared  
 8-Propyl-6-(3-pyridyl)- $\alpha$ -(3-pyridyl)-s-triazolo[4,3-a]pyrazine-3-acetic acid (preparation given) was condensed with 3-amino-4-cyclohexyl-1-cyclopropyl-1,2-butanediol to give I [A, B, X = N; Y = CH; R1 = R3 = 3-pyridyl, R2 = Pr, R4 = 1,2-dihydroxy-2-cyclopropylethyl, R5 = cyclohexylmethyl] (II). II had an IC50 of 61 nmol/L against renin in vitro. A solution for injection was prepared containing II.

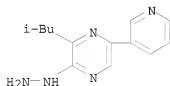
IT 142489-31-4P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of)

RN 142489-31-4 CAPLUS

CN 2(1H)-Pyrazinone, 3-(2-methylpropyl)-5-(3-pyridinyl)-, hydrazone (9CI)  
 (CA INDEX NAME)



IT 128972-01-0P 128972-05-4P 130227-97-3P

142488-91-3P 142488-93-5P 142488-94-6P

142488-97-9P 142488-98-0P 142489-01-8P

142489-02-9P 142489-07-4P 142489-08-5P

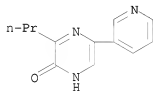
142489-09-6P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, as intermediate for renin inhibitors)

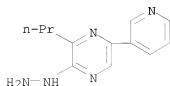
RN 128972-01-0 CAPLUS

CN 2(1H)-Pyrazinone, 3-propyl-5-(3-pyridinyl)- (CA INDEX NAME)



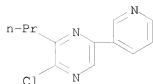
RN 128972-05-4 CAPLUS

CN 2(1H)-Pyrazinone, 3-propyl-5-(3-pyridinyl)-, hydrazone (9CI) (CA INDEX NAME)



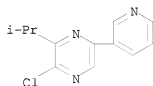
RN 130227-97-3 CAPLUS

CN Pyrazine, 2-chloro-3-propyl-5-(3-pyridinyl)- (CA INDEX NAME)



RN 142488-91-3 CAPLUS

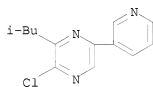
CN Pyrazine, 2-chloro-3-(1-methylethyl)-5-(3-pyridinyl)-, monohydrochloride  
(9CI) (CA INDEX NAME)



● HCl

RN 142488-93-5 CAPLUS

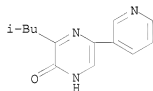
CN Pyrazine, 2-chloro-3-(2-methylpropyl)-5-(3-pyridinyl)-, monohydrochloride  
(9CI) (CA INDEX NAME)



● HCl

RN 142488-94-6 CAPLUS

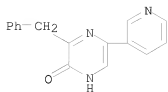
CN 2(1H)-Pyrazinone, 3-(2-methylpropyl)-5-(3-pyridinyl)- (CA INDEX NAME)



RN 142488-97-9 CAPLUS

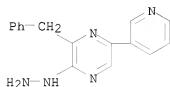
CN 2(1H)-Pyrazinone, 3-(phenylmethyl)-5-(3-pyridinyl)- (CA INDEX NAME)





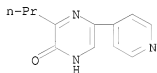
RN 142488-98-0 CAPLUS

CN 2(1H)-Pyrazinone, 3-(phenylmethyl)-5-(3-pyridinyl)-, hydrazone (9CI) (CA INDEX NAME)



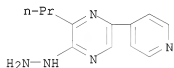
RN 142489-01-8 CAPLUS

CN 2(1H)-Pyrazinone, 3-propyl-5-(4-pyridinyl)- (CA INDEX NAME)



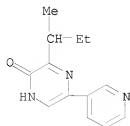
RN 142489-02-9 CAPLUS

CN 2(1H)-Pyrazinone, 3-propyl-5-(4-pyridinyl)-, hydrazone (9CI) (CA INDEX NAME)



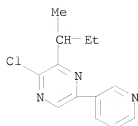
RN 142489-07-4 CAPLUS

CN 2(1H)-Pyrazinone, 3-(1-methylpropyl)-5-(3-pyridinyl)- (CA INDEX NAME)

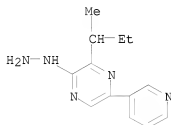


RN 142489-08-5 CAPLUS

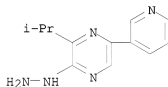
CN Pyrazine, 2-chloro-3-(1-methylpropyl)-5-(3-pyridinyl)- (CA INDEX NAME)



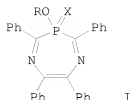
RN 142489-09-6 CAPLUS  
 CN 2(1H)-Pyrazinone, 3-(1-methylpropyl)-5-(3-pyridinyl)-, hydrazone (9CI)  
 (CA INDEX NAME)



IT 142489-30-3, 2-Hydrazino-3-isopropyl-5-(3-pyridinyl)pyrazine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, in preparation of renin inhibitors)  
 RN 142489-30-3 CAPLUS  
 CN 2(1H)-Pyrazinone, 3-(1-methylethyl)-5-(3-pyridinyl)-, hydrazone (9CI) (CA  
 INDEX NAME)



L14 ANSWER 188 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1992:469935 CAPLUS  
 DOCUMENT NUMBER: 117:69935  
 TITLE: A convenient and novel one-pot synthesis of  
 3-oxo-P-1,5,3-diazaphosphepines and  
 3-thioxo-P-1,5,3-diazaphosphepines  
 AUTHOR(S): Singh, M. S.; Rao, R. J.  
 CORPORATE SOURCE: Sch. Stud. Chem., Vikram Univ., Ujjain, 456 010, India  
 SOURCE: Phosphorus, Sulfur and Silicon and the Related  
 Elements (1992), 68(1-4), 115-18  
 CODEN: PSSLEC; ISSN: 1042-6507  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 117:69935  
 GI

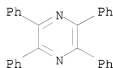


AB In a convenient one-pot sequence, treatment of benzil-dibenzylimine with sodium in dry THF followed by addition of phosphorodichloridates and phosphorothiodichloridates yields 3-oxo(thioxo)-P-1,5,3-diazaphosphepines I (R = Et, Ph; X = O, S), resp.

IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 189 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1992:448428 CAPLUS

DOCUMENT NUMBER: 117:48428

TITLE: Oxazolones. Part VI. Reaction of 5(4H)-oxazolones with nitrile imines: synthesis of 1H-1,2,4-triazoles through [3+2] cycloaddition

AUTHOR(S): Gelmi, Maria Luisa; Pocar, Donato; Riva, Raul

CORPORATE SOURCE: Fac. Farm., Univ. Milano, Milano, 20133, Italy

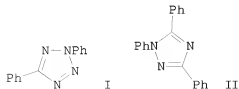
SOURCE: Heterocycles (1992), 34(2), 315-20  
 CODEN: HETCYAM; ISSN: 0385-5414

DOCUMENT TYPE: Journal

LANGUAGE: English

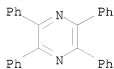
OTHER SOURCE(S): CASREACT 117:48428

GI

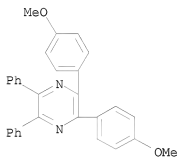


AB 5(4H)-Oxazolones react as dipolarophiles in [3+2]-cycloaddns. with nitrilimines generated from tetrazoles, e.g., I, in refluxing PhOMe, affording 2 1H-1,2,4-triazole derivs., e.g., II, and diarylethylenes.

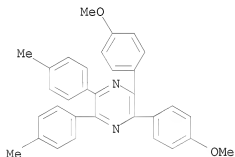
IT 642-04-6P 21798-24-3P 142312-22-9P  
 142846-21-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



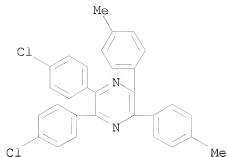
RN 21798-24-3 CAPLUS  
 CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 142312-22-9 CAPLUS  
 CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

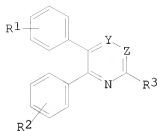


RN 142846-21-7 CAPLUS  
 CN Pyrazine, 2,3-bis(4-chlorophenyl)-5,6-bis(4-methylphenyl)- (CA INDEX NAME)

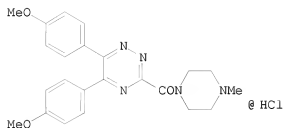


L14 ANSWER 190 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1992:235661 CAPLUS  
 DOCUMENT NUMBER: 116:235661  
 TITLE: Preparation of diphenylazines as antithrombotics  
 vasodilators, antihypertensives, and  
 antiinflammatories  
 INVENTOR(S): Takasugi, Hisashi; Sakai, Hiroyoshi; Tanaka, Akito;  
 Ishikawa, Takatoshi  
 PATENT ASSIGNEE(S): Fujisawa Pharmaceutical Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 121 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9202513	A1	19920220	WO 1991-JP1042	19910805
W: JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
JP 06501926	T	19940303	JP 1991-513247	19910805
PRIORITY APPLN. INFO.:			GB 1990-17183	A 19900806
			GB 1990-20345	A 19900918
			WO 1991-JP1042	W 19910805
OTHER SOURCE(S):	MARPAT	116:235661		
GI				



I



II

AB Title compds. [I; R1,R2 = alkoxy; R3 = (substituted) (tetrahydro)pyridyl, piperidyl, piperazinyl, morpholinyl, substituted amino, carboxyalkyl, carboxyalkenyl, hydroxyalkyl, CHO, EtO2C, alkylaminocarbonyl, etc.; Y,Z = CH, N], were prepared. Thus, 3-ethoxycarbonyl-5,6-bis(4-methoxyphenyl)-1,2,4-triazine and N-methylpiperazine were heated at 80-90° for 4 h 40 min to give, after treatment with HCl in EtOH, title compound II. In an ex vivo screen, II at 1.0 mg/kg orally gave 100% inhibition of arachidonic acid induced platelet aggregation in guinea pig platelet rich plasma.

IT 141424-74-0P 141424-76-2P 141424-78-4P

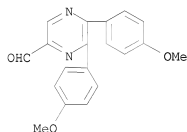
141425-14-1P 141425-15-2P 141425-16-3P

141425-17-4P 141425-25-4P 141425-26-5P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation of, as cardiovascular agent)

RN 141424-74-0 CAPLUS

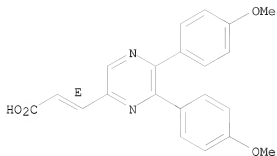
CN Pyrazinecarboxaldehyde, 5,6-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



RN 141424-76-2 CAPLUS

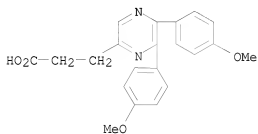
CN 2-Propenoic acid, 3-[5,6-bis(4-methoxyphenyl)pyrazinyl]-, (E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



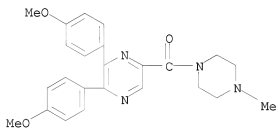
RN 141424-78-4 CAPLUS

CN Pyrazinepropanoic acid, 5,6-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



RN 141425-14-1 CAPLUS

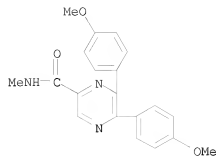
CN Piperazine, 1-[[5,6-bis(4-methoxyphenyl)pyrazinyl]carbonyl]-4-methyl-, monohydrochloride (9CI) (CA INDEX NAME)



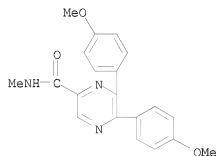
● HCl

RN 141425-15-2 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-methoxyphenyl)-N-methyl- (9CI) (CA INDEX NAME)

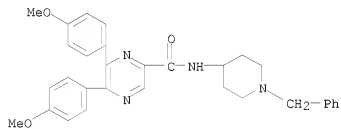


RN 141425-16-3 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-methoxyphenyl)-N-methyl-, monohydrochloride  
 (9CI) (CA INDEX NAME)



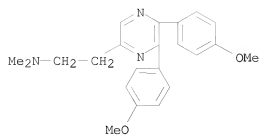
● HCl

RN 141425-17-4 CAPLUS  
 CN Pyrazinecarboxamide, 5,6-bis(4-methoxyphenyl)-N-[1-(phenylmethyl)-4-piperidinyl]- (9CI) (CA INDEX NAME)

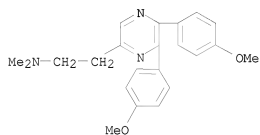


RN 141425-25-4 CAPLUS  
 CN Pyrazineethanamine, 5,6-bis(4-methoxyphenyl)-N,N-dimethyl- (9CI) (CA INDEX NAME)



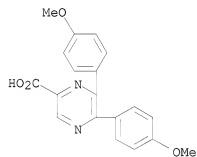


RN 141425-26-5 CAPLUS  
 CN Pyrazineethanamine, 5,6-bis(4-methoxyphenyl)-N,N-dimethyl-, monohydrochloride (9CI) (CA INDEX NAME)

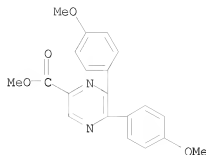


● HCl

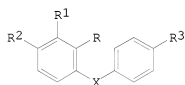
IT 122956-28-9P 122956-29-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, as intermediate for cardiovascular agents)  
 RN 122956-28-9 CAPLUS  
 CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



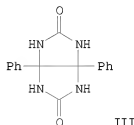
RN 122956-29-0 CAPLUS  
 CN Pyrazinecarboxylic acid, 5,6-bis(4-methoxyphenyl)-, methyl ester (9CI)  
 (CA INDEX NAME)



L14 ANSWER 191 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1992:174062 CAPLUS  
 DOCUMENT NUMBER: 116:174062  
 TITLE: Ureas in organic synthesis. V. Reactions of aromatic ketones and 1,2-diketones with ureas in formic acid Bakibaev, A. A.; Yagovkin, A. Yu.; Filimonov, V. D. Tomsk. Politekh. Inst., Tomsk, USSR Zhurnal Organicheskoi Khimii (1991), 27(7), 1512-19 CODEN: ZORKAE; ISSN: 0514-7492  
 JOURNAL  
 LANGUAGE: Russian  
 OTHER SOURCE(S): CASREACT 116:174062  
 GI

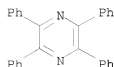


II

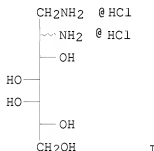


III

AB The reductive aminoformylation of benzophenones I (X = CO; R = H, Me, OH; R1 = H, Me, Cl, NO2, MeO, F; R2 = H, Me, Cl; R3 = H, Me, Cl) with H2NCONH2 and HCO2H gave methylformamides I (X = CHNHCHO). The reactions of benzoin and benzil were accompanied by cyclization to give imidazoles, e.g., II (R4 = H, Ph) and tetraazabicyclooctanediene III.  
 IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

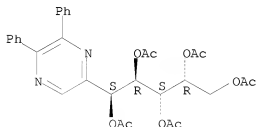


L14 ANSWER 192 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1992:59838 CAPLUS  
 DOCUMENT NUMBER: 116:59838  
 TITLE: Synthesis of 1,2-diamino-1,2-dideoxy-D-glycero-L-manno-  
 and D-glycero-L-gluco-heptitol  
 AUTHOR(S): Bueno Martinez, Manuel; Turmo Fernandez, Pilar; Galbis  
 Perez, Juan A.  
 CORPORATE SOURCE: Fac. Pharm., Univ. Seville, Seville, 41071, Spain  
 SOURCE: Carbohydrate Research (1991), 219, 241-6  
 CODEN: CRBRAT; ISSN: 0008-6215  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 116:59838  
 GI



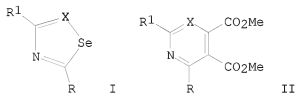
AB The synthesis of two epimeric title hydrochloride I from easily accessible  
 compds. prepared from D-galactose, is reported.  
 IT 138580-64-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 138580-64-0 CAPLUS  
 CN D-Arabinitol, 5-C-(5,6-diphenylpyrazinyl)-, 1,2,3,4,5-pentaacetate, (5S)-  
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

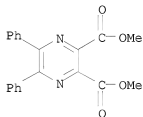


L14 ANSWER 193 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1992:41417 CAPLUS  
 DOCUMENT NUMBER: 116:41417  
 TITLE: Novel conversion of selenium-containing five-membered  
 aromatics to nitrogen-containing six-membered  
 aromatics via hetero Diels-Alder reaction with  
 acetylenic dienophiles

AUTHOR(S): Takikawa, Yuji; Hikage, Shigeki; Matsuda, Youichi; Higashiyama, Kazuyuki; Takeishi, Yoshiyuki; Shimada, Kazuaki  
 CORPORATE SOURCE: Fac. Eng., Iwate Univ., Morioka, 020, Japan  
 SOURCE: Chemistry Letters (1991), (11), 2043-6  
 CODEN: CMLTAG; ISSN: 0366-7022  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 116:41417  
 GI

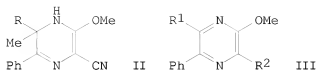


AB Treatment of selenium-containing five-membered heteroaroms. with acetylenic dienophiles afforded several nitrogen heterocycles in good to moderate yields under thermal reaction conditions. These reactions proceed through a sequential [4 + 2] cycloaddn.-selenium extrusion pathway. Thus, reaction of MeO2CC.tpi bond.CCO2Me with selenazoles I [X = N, R = R1 = Ph, 4-MeOC6H4, Pr, Me(CH2)6, PhCH2S, Me2N; X = CH, R = Ph, R1 = Ph, 4-MeC5H4, 4-MeOC6H4, 4-ClC6H4] gave pyrimidine and pyridine derivs. II in 17-99% yields.  
 IT 80356-81-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 80356-81-6 CAPLUS  
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-diphenyl-, dimethyl ester (9CI) (CA INDEX NAME)



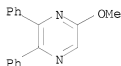
L14 ANSWER 194 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1992:41392 CAPLUS  
 DOCUMENT NUMBER: 116:41392  
 TITLE: Condensation reactions of (1E,3E)-4-amino-3-cyano-4-methoxy-1-phenyl-2-azabutadiene and electrocyclizations of diazatrienes  
 Freeman, Fillmore; Kim, Darrick S. H. L.  
 AUTHOR(S): Dep. Chem., Univ. California, Irvine, CA, 92717, USA  
 CORPORATE SOURCE: Journal of Organic Chemistry (1992), 57(2), 550-2  
 SOURCE: CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 116:41392

GI

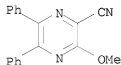


AB (1E,3E)-4-Amino-3-cyano-4-methoxy-1-phenyl-2-azabutadiene (I) reacts with 2-methoxypropene in refluxing methylbenzene in the presence of catalytic pyridinium p-toluenesulfonate to give 2-cyano-5,5-dimethyl-3-methoxy-6-phenyl-4,5-dihydro-1,4-diazabenzene II (R = Me). Similarly, I reacts with tri-Et orthoformate and tri-Et orthobenzoate to give 1,4-diazabenzene II, (R1 = H, R2 = cyano) and III (R1 = Ph, R2 = cyano), resp. With tri-Et orthoacetate I gives III (R1 = Me, R2 = cyano) and II (R = OEt). Phenylmethanal and (2-thienyl)methanal react with I to give 1,4-diazabenzene III (R1 = Ph, R2 = H; R1 = 2-thienyl, R2 = H). Diazatrienes (enediimines) are proposed as the intermediates undergoing six  $\pi$ -electron electrocyclicizations to 1,4-diazabenzene.

IT 34121-90-9P 75018-08-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 34121-90-9 CAPLUS  
 CN Pyrazine, 5-methoxy-2,3-diphenyl- (8CI, 9CI) (CA INDEX NAME)

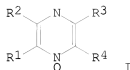


RN 75018-08-5 CAPLUS  
 CN Pyrazinecarbonitrile, 3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 195 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1991:492223 CAPLUS  
 DOCUMENT NUMBER: 115:92223  
 TITLE: Efficient alkylation and acylation of pyrazine  
 1-oxides  
 AUTHOR(S): Aoyagi, Yutaka; Maeda, Atsushi; Inoue, Masami;  
 Shiraishi, Mitsuhiro; Sakakibara, Yuki; Fukui, Yuko;  
 Ohta, Akihiro; Kajii, Kenzo; Kodama, Yoshio  
 CORPORATE SOURCE: Tokyo Coll. Pharm., Hachioji, 192-03, Japan  
 SOURCE: Heterocycles (1991), 32(4), 735-48  
 CODEN: HETCYAM; ISSN: 0385-5414  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 115:92223

GI



AB Reaction of pyrazine 1-oxides I (R1 = R3 = sec-Bu, iso-Bu, R2 = R4 = H; R1 = R3 = iso-Pr, R2 = Cl, R4 = H; R1 = R2 = Ph, R3 = R4 = H) with electrophiles in the presence of lithium derivative of 2,2,6,6-tetramethylpiperidine and N,N,N',N'-tetramethylethylenediamine afforded 2-alkyl- and 2-acylpyrazine 1-oxides I (R4 = COC6H4Me-4, CHO, CH(OH)Et, CH(OH)Ph) in good yields, and the products could be deoxygenated with PBr3 or by catalytic hydrogenation in presence of Raney Ni.

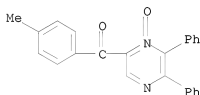
IT 135510-34-8P 135510-38-2P 135510-42-8P

135510-46-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

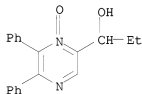
RN 135510-34-8 CAPLUS

CN Methanone, (4-methylphenyl) (1-oxido-5,6-diphenylpyrazinyl)- (9CI) (CA INDEX NAME)



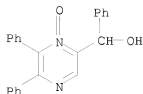
RN 135510-38-2 CAPLUS

CN Pyrazinemethanol,  $\alpha$ -ethyl-5,6-diphenyl-, 1-oxide (9CI) (CA INDEX NAME)

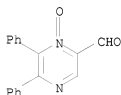


RN 135510-42-8 CAPLUS

CN Pyrazinemethanol,  $\alpha$ ,5,6-triphenyl-, 1-oxide (9CI) (CA INDEX NAME)

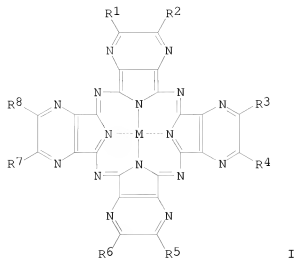


RN 135510-46-2 CAPLUS  
 CN Pyrazinecarboxaldehyde, 5,6-diphenyl-, 1-oxide (9CI) (CA INDEX NAME)



L14 ANSWER 196 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1991:431112 CAPLUS  
 DOCUMENT NUMBER: 115:31112  
 TITLE: Near IR-absorbing tetrahydrazinoporphyrazine derivatives  
 INVENTOR(S): Nagasaki, Fumihiko; Hatano, Hiromi; Takahashi, Hiroshi  
 PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03007288	A	19910114	JP 1989-219865	19890825
PRIORITY APPLN. INFO.:			JP 1989-32143	A1 19890210
			JP 1989-73154	A1 19890324
OTHER SOURCE(S):		MARPAT 115:31112		
GI				



AB Tetrahydrazinoporphyrazine derivs. I [R1-8 = H, halo, amino, substituted Ph or furyl, (un)substituted thienyl, PhO, alkoxy, phenylthio, or alkylthio; R1R2, R3R4, R5R6, R7R8 = 1,2-phenylenedioxy, 1,2-phenylenedithio;  $\geq 1$  of R1-8 is not H; M = 2H, metal, metal oxide, metal hydroxide, acyl metal, alkoxy metal, siloxy metal, metal halide] show good organic solvent solubility and are useful for optical recording,

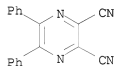
photosensitive materials, catalysts, and freshness preservatives (no data). Thus, stirring 2,3-dicyano-5,6-diphenylpyrazine and VC13 in chloronaphthalene under reflux for 5 h gave 48% I (R1-8 = Ph, M = VO) showing  $\lambda_{\text{max}}$  690 nm (in 97% H2SO4).

IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine 134071-88-8  
 , 2,3-Dicyano-5,6-bis(4-isopropylphenyl)pyrazine 134071-89-9,  
 2,3-Dicyano-5,6-bis(4-methoxyphenyl)pyrazine  
 RL: USES (Uses)

(cyclocondensation and complexation of)

RN 52197-23-6 CAPLUS

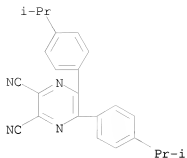
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



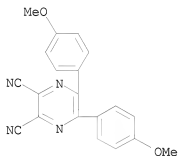
RN 134071-88-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1-methylethyl)phenyl]- (CA INDEX NAME)

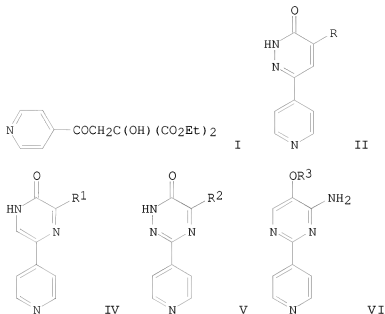




RN 134071-89-9 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



L14 ANSWER 197 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1991:206976 CAPLUS  
 DOCUMENT NUMBER: 114:206976  
 TITLE: Synthesis of aza analogs of amrinone  
 AUTHOR(S): Singh, Baldev; Leshner, George Y.  
 CORPORATE SOURCE: Dep. Med. Chem., Sterling Res. Group, Rensselaer, NY,  
 12144, USA  
 SOURCE: Heterocycles (1990), 31(12), 2163-72  
 CODEN: HTCYAM; ISSN: 0385-5414  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 114:206976  
 GI

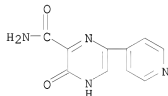


AB The aldol condensation product I of 4-acetylpyridine and  $\text{CO}(\text{CO}_2\text{Et})_2$  was converted to pyridazinecarboxylic acid hydrazide II ( $\text{R} = \text{CONHNH}_2$ ) (III). Curtius reaction of III gave aminopyridazinone II ( $\text{R} = \text{NH}_2$ ). The condensation of (4-pyridyl)glyoxal with aminomalonamide  $\text{H}_2\text{NCH}(\text{CONH}_2)_2$  yielded pyrazinecarboxamide IV ( $\text{R}_1 = \text{CONH}_2$ ) which was transformed to aminopyrazinone IV ( $\text{R}_1 = \text{NH}_2$ ) by the Hofmann reaction. Curtius reaction of 1,2,4-triazinone-5-carboxylic acid V ( $\text{R}_2 = \text{CO}_2\text{H}$ ) gave aminotriazinone V ( $\text{R}_2 = \text{NH}_2$ ). Demethylation of methoxypyrimidine VI ( $\text{R}_3 = \text{Me}$ ) gave pyrimidinol VI ( $\text{R}_3 = \text{H}$ ).

IT 133689-99-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and Hofmann reaction of)

RN 133689-99-3 CAPLUS

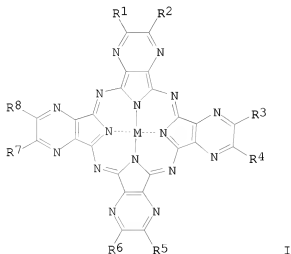
CN Pyrazinecarboxamide, 3,4-dihydro-3-oxo-6-(4-pyridinyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 198 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1991:133032 CAPLUS  
 DOCUMENT NUMBER: 114:133032  
 TITLE: Tetrapyrazinoporphyrazine compounds  
 Tokita, Sumio; Kojima, Masatoshi; Cho, Mikio; Nishi, Hisao; Tomota, Haruhiko; Saito, Shojiro; Shiraishi, Shinsaku  
 PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02232267	A	19900914	JP 1989-53327	19890306
PRIORITY APPLN. INFO.: GI			JP 1989-53327	19890306



AB The title compds. useful for optical recording media, electrophotog. and laser printer photoreceptors, redox catalysts, and flavor and food freshness retainers have the general formula I (R1-8 = H, Ph, furyl, excluding all R1-8 = H; M = H, metal, metal oxide, metal hydroxide, acylmetal, alkoxy metal, siloxymetal, metal halide).

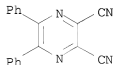
IT 52197-23-6

RL: USES (Uses)

(tetrapyrrolineporphyrazines for)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 199 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

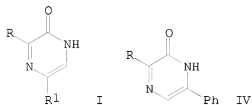
ACCESSION NUMBER: 1991:122255 CAPLUS

DOCUMENT NUMBER: 114:122255

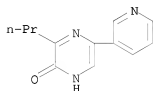
TITLE: An efficient synthesis of 3-alkyl-5-aryl-2(1H)-pyrazinones

AUTHOR(S): Bradbury, Robert H.; Griffiths, David; Rivett, Janet E.

CORPORATE SOURCE: Dep. Chem., ICI Pharm., Macclesfield/Cheshire, SK10 4TG, UK  
 SOURCE: Heterocycles (1990), 31(9), 1647-53  
 CODEN: HTCYAM; ISSN: 0385-5414  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 114:122255  
 GI



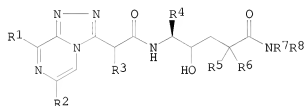
AB Pyrazinones I (R = allyl, Pr, MeSCH<sub>2</sub>CH<sub>2</sub>, Me<sub>2</sub>CHCH<sub>2</sub>; R<sub>1</sub> = Ph) were prepared by cyclocondensation of H<sub>2</sub>NCHRCONH<sub>2</sub> (II) with PhCOCH(OH)<sub>2</sub> (III). Pyrazinone IV was also formed from the reaction of II (R = Me<sub>2</sub>CHCH<sub>2</sub>) with III. I (R = Pr, Me<sub>2</sub>CHCH<sub>2</sub>; R<sub>1</sub> = Ph, 3-pyridyl) were prepared by condensation of RCOC<sub>2</sub>Na with R<sub>1</sub>COCH<sub>2</sub>NH<sub>2</sub>.HCl to give RCOC<sub>2</sub>NHCH<sub>2</sub>COR<sub>1</sub> which underwent cyclization with NH<sub>4</sub>OAc. A crystal structure of I (R = allyl, R<sub>1</sub> = Ph) was determined  
 IT 128972-01-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)  
 RN 128972-01-0 CAPLUS  
 CN 2(1H)-Pyrazinone, 3-propyl-5-(3-pyridinyl)- (CA INDEX NAME)



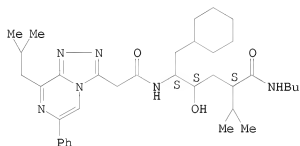
L14 ANSWER 200 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1991:81884 CAPLUS  
 DOCUMENT NUMBER: 114:81884  
 TITLE: Preparation of (triazolopyrazinyl)acetamides as renin inhibitors  
 INVENTOR(S): Bradbury, Robert Hugh; Brown, David; Roberts, David Anthony; Waterson, David  
 PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK  
 SOURCE: Eur. Pat. Appl., 37 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 369743	A2	19900523	EP 1989-311777	19891114
EP 369743	A3	19910911		
EP 369743	B1	19950419		
R: BE, CH, DE, ES, FR, GB, IT, LI, NL				
AU 8944354	A	19900524	AU 1989-44354	19891102
AU 629867	B2	19921015		
ZA 8908361	A	19900829	ZA 1989-8361	19891102
CA 2002888	A1	19900517	CA 1989-2002888	19891114
US 5091425	A	19920225	US 1989-435687	19891114
JP 02204491	A	19900814	JP 1989-297782	19891117
PRIORITY APPLN. INFO.:			GB 1988-26930	A 19881117
			GB 1989-12080	A 19890525
OTHER SOURCE(S):	MARPAT 114:81884			
GI				



I



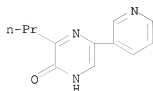
II

AB The title compds. [I; R1 = alkyl, Ph; R2 = Ph, (alkyl)pyridyl; R3 = H, R9A; R4 = alkyl, cycloalkylalkyl; R5 = H, alkyl; R6 = H, alkyl(thio), alkoxy, OH, alkylsulfinyl, alkylsulfonyl, R10A1; R5R6 = alkylene; R7 = H, (hydroxy)alkyl; R8 = H, (hydroxy)alkyl, R11A2; R9 = pyridyl, imidazolyl, thiazolyl, pyrazolyl; R10 = alkoxy, alkenyl, Ph, OH; R11 = alkoxy, morpholino, thiomorpholino, piperidino, pyrrolidino, piperazinyl, (alkyl)pyridyl, (substituted) Ph, etc.; A = CH2, CH2CH2; A1, A2 = C1-4 alkylene, were prepared as renin inhibitors. Thus, a mixture of 8-isobutyl-6-phenyl-1,2,4-triazolo[4,3-a]pyrazin-3-ylacetic acid (preparation from 2-aminoacetophenone and Na 4-methyl-2-oxopentanoate given), (2S,4S,5S)-5-amino-N-butyl-6-cyclohexyl-4-hydroxy-2-isopropylhexanamide (preparation from isovaleric acid and (5R,4S)-3-benzylloxycarbonyl-4-cyclohexylmethyl-5-iodomethyl-2,2-dimethyl-1,3-oxazolidine given), 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide.HCl, 1-hydroxybenzotriazole; and Et3N in DMF was stirred overnight to give amide II. I are useful in treating hypertension, congestive heart failure, and hyperaldosteronism. I (R1 = Pr, R2 = 3-pyridyl, other groups as in II) inhibited human plasma renin with IC50 = 2 + 10-10 M.

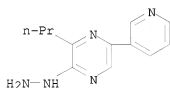
II 128972-01-0P 128972-05-4P 128972-09-8P 130227-97-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as intermediate for triazolopyrazinylacetamide renin

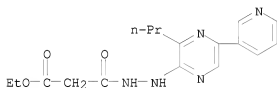
inhibitor)  
 RN 128972-01-0 CAPLUS  
 CN 2(1H)-Pyrazinone, 3-propyl-5-(3-pyridinyl)- (CA INDEX NAME)



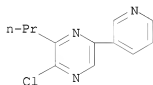
RN 128972-05-4 CAPLUS  
 CN 2(1H)-Pyrazinone, 3-propyl-5-(3-pyridinyl)-, hydrazone (9CI) (CA INDEX NAME)



RN 128972-09-8 CAPLUS  
 CN Propanedioic acid, monoethyl ester, 2-[3-propyl-5-(3-pyridinyl)pyrazinyl]hydrazide (9CI) (CA INDEX NAME)



RN 130227-97-3 CAPLUS  
 CN Pyrazine, 2-chloro-3-propyl-5-(3-pyridinyl)- (CA INDEX NAME)



L14 ANSWER 201 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1991:34976 CAPLUS  
 DOCUMENT NUMBER: 114:34976  
 TITLE: Some new chromogenic reagents for copper(I) and iron(II); pyridyl-substituted pyrazine and quinoxaline compounds  
 AUTHOR(S): Khuhawar, M. Y.; Khaskheli, G. Q.  
 CORPORATE SOURCE: Inst. Chem., Univ. Sindh, Jamshoro, Pak.  
 SOURCE: Journal of the Chemical Society of Pakistan (1990), 12(1), 52-61

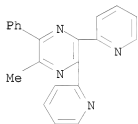
DOCUMENT TYPE:

Journal

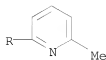
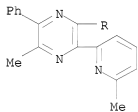
LANGUAGE:

English

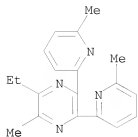
- AB Fifteen new pyridyl-substituted pyrazine ligands were synthesized and their IR and mass spectra were recorded. The ligands containing Et, Me, or Ph groups adjacent to donor nitrogen atoms in aromatic pyridyl or pyrazine rings react only with copper(I), but the reagents 2,3-bis(2'-pyridyl)-5-phenyl-5,6-dihydropyrazine, 2,3-bis(2'-pyridyl)-5-phenyl-6-methyl-5,6-dihydropyrazine, 2,5-diphenyl-3-(2'-pyridyl)-5,6-dihydropyrazine, and 2,3-bis(2'-pyridyl)-5-phenylpyrazine react with copper(I) and iron(II) to form colored complexes. The reactions and effects of Me, Et, and Ph substitution were studied in terms of solution stability, molar absorptivity and wavelength of maximum absorbance. 2,3-Bis(2'-(6-methylpyridyl))-5,5,6,6-tetramethyl-5,6-dihydropyrazine is the best chromogenic reagent for copper determination, and was applied to the anal. of water and human hair.
- IT 131167-62-9P 131167-63-0P 131167-64-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and complexation reaction of, with copper(I))
- RN 131167-62-9 CAPLUS
- CN Pyrazine, 2-methyl-3-phenyl-5,6-di-2-pyridinyl- (CA INDEX NAME)



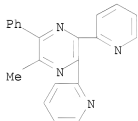
- RN 131167-63-0 CAPLUS
- CN Pyrazine, 2-methyl-5,6-bis(6-methyl-2-pyridinyl)-3-phenyl- (CA INDEX NAME)



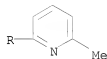
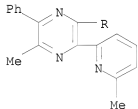
- RN 131167-64-1 CAPLUS
- CN Pyrazine, 2-ethyl-3-methyl-5,6-bis(6-methyl-2-pyridinyl)- (CA INDEX NAME)



IT 131167-62-9D, copper complexes 131167-63-0D, copper  
complexes 131167-64-1D, copper complexes  
RL: PRP (Properties)  
(visible spectra of)  
RN 131167-62-9 CAPLUS  
CN Pyrazine, 2-methyl-3-phenyl-5,6-di-2-pyridinyl- (CA INDEX NAME)

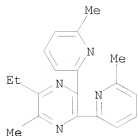


RN 131167-63-0 CAPLUS  
CN Pyrazine, 2-methyl-5,6-bis(6-methyl-2-pyridinyl)-3-phenyl- (CA INDEX  
NAME)

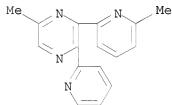


RN 131167-64-1 CAPLUS  
CN Pyrazine, 2-ethyl-3-methyl-5,6-bis(6-methyl-2-pyridinyl)- (CA INDEX NAME)

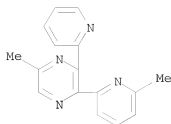




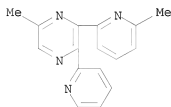
L14 ANSWER 202 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1991:34923 CAPLUS  
 DOCUMENT NUMBER: 114:34923  
 TITLE: Some new asymmetrical pyridyl-substituted pyrazine and quinoxaline ligands for copper and iron  
 AUTHOR(S): Khuhawar, M. Y.; Stephen, W. I.  
 CORPORATE SOURCE: Dep. Chem., Univ. Birmingham, Birmingham, B15 2TT, UK  
 SOURCE: Pakistan Journal of Scientific and Industrial Research (1990), 33(3), 77-81  
 CODEN: PSIRAA; ISSN: 0030-9885  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The preparation is reported of 7 new pyridyl-substituted quinoxaline, dihydropyrazine and pyrazine ligands. The absorption properties of their reaction towards copper and iron were studied. The reagents 2-(2'-pyridyl)-3-[2''-(6''-methylpyridyl)]quinoxaline and 2-(2'-pyridyl)-3-[2''-(6-methylpyridyl)]-6-methylpyrazine for copper and 2-(2'-pyridyl)-3-[2''-(6''-(methylpyridyl)]-5,6-dihydropyrazine and 2-(2'-pyridyl)-3-[2''-(6''-methylpyridyl)]-5-methylpyrazine were investigated for their possible use for the simultaneous determination of copper and iron in a single aliquot.  
 IT 76348-03-3D, copper and iron complexes 89684-69-5D, copper and iron complexes  
 RL: PRP (Properties)  
 (molar absorptivity of)  
 RN 76348-03-3 CAPLUS  
 CN Pyrazine, 5-methyl-3-(6-methyl-2-pyridinyl)-2-(2-pyridinyl)- (9CI) (CA INDEX NAME)



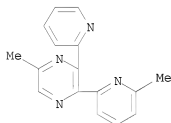
RN 89684-69-5 CAPLUS  
 CN Pyrazine, 5-methyl-2-(6-methyl-2-pyridinyl)-3-(2-pyridinyl)- (9CI) (CA INDEX NAME)



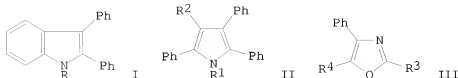
IT 76348-03-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and use of, in copper and iron determination)  
 RN 76348-03-3 CAPLUS  
 CN Pyrazine, 5-methyl-3-(6-methyl-2-pyridinyl)-2-(2-pyridinyl)- (9CI) (CA  
 INDEX NAME)



IT 89684-69-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and use of, in copper and iron determination by spectrometry)  
 RN 89684-69-5 CAPLUS  
 CN Pyrazine, 5-methyl-2-(6-methyl-2-pyridinyl)-3-(2-pyridinyl)- (9CI) (CA  
 INDEX NAME)



L14 ANSWER 203 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1990:571948 CAPLUS  
 DOCUMENT NUMBER: 113:171948  
 TITLE: Electron transfer reactions. Reaction of nitrogen  
 heterocycles with potassium  
 Muneer, Mohammed; Kamat, Prashant V.; George,  
 Manapurathu V.  
 AUTHOR(S):  
 CORPORATE SOURCE: Photochem. Res. Unit, Reg. Res. Lab., Trivandrum,  
 695019, India  
 SOURCE: Canadian Journal of Chemistry (1990), 68(6), 969-75  
 CODEN: CJCHAG; ISSN: 0008-4042  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English



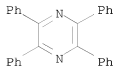
AB The results of potassium-induced transformations of some selected nitrogen heterocycles are presented. The substrates under investigation include 2,3-diphenylindoles I (R = H, Me, Ph) triphenylpyrrole II (R1 = H, R2 = Ph; R1 = Ph, CH2Ph, R2 = H) oxazoles III (R3 = Me, Ph, R4 = Ph; R3 = Ph, R4 = Me), and 2,4,5-triphenylimidazole (IV). Treatment of I (R = H) with K in THF gave 9H-dibenzo[a,c]carbazole (V), whereas I (R = Ph) gave a mixture of 9-phenyl-9H-dibenzo[a,c]carbazole (VI), and 2,3-diphenylindole. Under identical conditions I (R = Me) gave only the cleavage product I (R = H). In contrast, when the reactions of I (R = H, Ph) were carried out with K in THF saturated with oxygen, and with potassium superoxide in benzene containing 18-crown-6, a mixture of 2-benzamidobenzophenone, the carbazoles V, VI, and I (R = H) was formed. Although no product was isolated on treatment of II (R1 = H, R1 = Ph) with K in THF, the reaction with K in THF saturated with oxygen gave a mixture of tetraphenylpyrazine, the benzoylaminostilbene, the lactam, benzamide, and benzoic acid. Similar results were obtained in the reaction with potassium superoxide. The reaction of II (R1 = Ph, CH2Ph, R2 = H) with K gave the NH pyrrole in each case, whereas the reaction with K in THF, saturated with oxygen, gave a mixture of NH pyrrole, butanone, 1,4-dione, lactam, amides, and benzoic acid. Attempted reactions with potassium superoxide did not give any isolable product; most of the starting material could be recovered unchanged. A mixture of N-(1,2-diphenylethyl)benzamide and benzoic acid were formed in the reaction of the oxazole III (R3 = R4 = Ph) with K, whereas III (R3 = Me, R4 = Ph; R3 = Ph, R4 = Me), under analogous conditions, gave N-vinylamides, and benzoic acid. In contrast, treatment of IV with K in THF did not give any product; however, when the reaction was carried out with K in THF saturated with oxygen, and with potassium superoxide, dibenzamide was isolated. Radical ions have been invoked as intermediates in the transformation of the different substrates to the observed products. Cyclic voltammetric studies have been carried out to measure the reduction potentials of these radical anion intermediates. These radical anions have also been generated by pulse radiolysis in methanol, and their absorption spectra recorded.

IT 642-04-6P

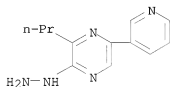
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 642-04-6 CAPLUS

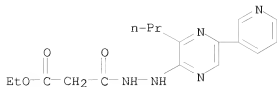
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



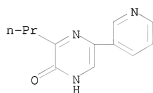
ACCESSION NUMBER: 1990:532799 CAPLUS  
 DOCUMENT NUMBER: 113:132799  
 TITLE: 1,2,4-Triazolo[4,3-a]pyrazine derivatives with human renin inhibitory activity. 1. Synthesis and biological properties of alkyl alcohol and statine derivatives  
 AUTHOR(S): Roberts, David A.; Bradbury, Robert H.; Brown, David; Faull, Alan; Griffiths, David; Major, John S.; Oldham, Alec A.; Pearce, Robert J.; Ratcliffe, Arnold H.; et al.  
 CORPORATE SOURCE: Dep. Chem., ICI Pharm., Macclesfield/Cheshire, SK10 4TG, UK  
 SOURCE: Journal of Medicinal Chemistry (1990), 33(9), 2326-34  
 CODEN: JMCMAR; ISSN: 0022-2623  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 113:132799  
 GI For diagram(s), see printed CA Issue.  
 AB A series of 1,2,4-triazolo[4,3-a]pyrazine derivs. with human renin inhibitory activity which incorporate (1S,2S)-2-amino-1,3-dicyclohexyl-1-hydroxypropane, statine, and (3S,4S)-4-amino-5-cyclohexyl-3-hydroxypentanoic acid transition-state mimetics have been prepared  
 Structure-activity relationships for renin inhibitory activity in the series are consistent with the 2-[8-isobutyl-6-phenyl-1,2,4-triazolo[4,3-a]pyrazin-3-yl]-3-(3-pyridyl)propionic acid moiety acting as a non-peptidic replacement for the P4-P2 (Pro-Phe-His) residues of the natural substrate angiotensinogen. Compds. I [R = cyclohexyl, CHMe2, R1 = CH2C6H4CH2NH2-3; R = cyclohexyl, R1 = (S)-(CH2)4CH(NH2)CO2H] were potent inhibitors of partially purified human renin (IC50 values 1.7, 6.8, and 3.7 nM, resp.), and also effectively lowered blood pressure in anesthetized, sodium depleted marmosets following i.v. administration. On oral administration however, no blood pressure lowering activity could be detected, and absorption studies in bile duct cannulated rats indicate that this may be due primarily to poor oral absorption, rather than rapid biliary excretion.  
 IT 128972-05-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and amidation of, with Et malonyl chloride)  
 RN 128972-05-4 CAPLUS  
 CN 2(1H)-Pyrazinone, 3-propyl-5-(3-pyridinyl)-, hydrazone (9CI) (CA INDEX NAME)



IT 128972-09-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and cyclization of, triazolopyrazine from)  
 RN 128972-09-8 CAPLUS  
 CN Propanedioic acid, monoethyl ester, 2-[3-propyl-5-(3-pyridinyl)pyrazinyl]hydrazide (9CI) (CA INDEX NAME)



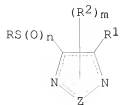
IT 128972-01-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and sequential chlorination and substitution of, with  
 hydrazine)  
 RN 128972-01-0 CAPLUS  
 CN 2(1H)-Pyrazinone, 3-propyl-5-(3-pyridinyl)- (CA INDEX NAME)



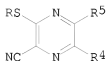
L14 ANSWER 205 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1990:459240 CAPLUS  
 DOCUMENT NUMBER: 113:59240  
 TITLE: Preparation of pyrazine and 1,4-diazepine derivatives  
 INVENTOR(S): Yagihara, Tomio; Matsui, Nobuo; Hamamoto, Isami;  
 Hatano, Hiromi; Tazaki, Seiji  
 PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02049775	A	19900220	JP 1988-233628	19880920
PRIORITY APPLN. INFO.:			JP 1988-120729	A1 19880519
OTHER SOURCE(S):	MARPAT	113:59240		

GI



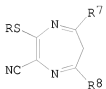
I



II



III



IV

AB The title compds. [I, more specifically II, III, and IV; R = (heterocyclilyl)alkyl, aralkyl, cycloalkyl, alkenyl, (un)substituted aryl; n = 0, 1, 2; R1 = H, cyano, CONH2, (un)substituted CO2H; R2 = (alkyl)aryl, alkoxycarbonyl, oxo; m = 0, 1, 2; or R2R2 completing a ring; Z = CC or CCC; R4, R5 = H, alkyl, aralkyl, aryl, alkoxycarbonyl; or R4R5 completing a ring; R7, R8 = alkyl, aryl; or R7R8 completing a ring], useful as intermediates for pharmaceuticals, agrochemicals, perfumes, dyes, or polymers, are prepared by cyclocondensation of (1) RSC(NH2):C(NH2)CN (V) with R4COCOR5 to II, (2) V with R6COCOR6 (R6 = Cl, imidazolyl) to III, and (3) V with R7COCH2COR8 to IV. Thus, benzil was added to a solution of V in EtOH. After stirring 2 h at room temperature, precipitated crystals were removed by

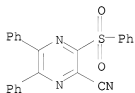
filtration and recrystd. from benzene-n-hexane to give 70% II (R = Ph, R4 = R5 = Ph). Addnl. 42 I were prepared

IT 124629-51-2P 128142-10-9P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, by cyclocondensation of diaminoacrylonitrile and dioxo compound)

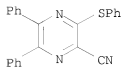
RN 124629-51-2 CAPLUS

CN Pyrazinecarbonitrile, 5,6-diphenyl-3-(phenylsulfonyl)- (9CI) (CA INDEX NAME)

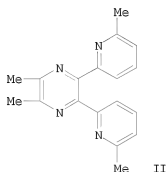
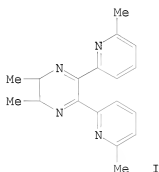


RN 128142-10-9 CAPLUS

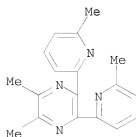
CN Pyrazinecarbonitrile, 5,6-diphenyl-3-(phenylthio)- (9CI) (CA INDEX NAME)



L14 ANSWER 206 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1990:440625 CAPLUS  
 DOCUMENT NUMBER: 113:40625  
 TITLE: New pyridyl-substituted pyrazine ligands as spectrophotometric reagents for copper and iron  
 AUTHOR(S): Belcher, R.; Khuhawar, M. Y.; Stephen, W. I.  
 CORPORATE SOURCE: Dep. Chem., Univ. Birmingham, Birmingham, B15 2TT, UK  
 SOURCE: Journal of the Chemical Society of Pakistan (1989), 11(3), 185-93  
 CODEN: JCSPDF; ISSN: 0253-5106  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 113:40625  
 GI

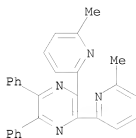


AB Twelve new Pyridyl-substituted dihydropyrazine and pyrazine ligands have been prepared by condensation of dioxo-1-phenyl-2-(2'-pyridyl), 2,2'-pyridyl and 6,6'-dimethyl-2,2'-pyridyl with ethylenediamine, 2,3-diaminobutane, 2-methyl-1,2-diaminopropane and meso-stilbenediamine. The reagents have been assessed for solvent extraction and spectrophotometric detns. of copper and iron. The reagents I and II are particularly found useful with anal. selectivity similar to neocuproine.  
 IT 89684-67-3 127727-04-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (complexation of, with copper and iron)  
 RN 89684-67-3 CAPLUS  
 CN Pyrazine, 2,3-dimethyl-5,6-bis(6-methyl-2-pyridinyl)- (9CI) (CA INDEX NAME)



RN 127727-04-2 CAPLUS

CN Pyrazine, 2,3-bis(6-methyl-2-pyridinyl)-5,6-diphenyl- (CA INDEX NAME)

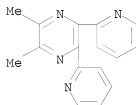


IT 89684-66-2P 127727-03-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and complexation of, with copper and iron)

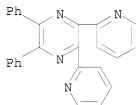
RN 89684-66-2 CAPLUS

CN Pyrazine, 2,3-dimethyl-5,6-di-2-pyridinyl- (9CI) (CA INDEX NAME)



RN 127727-03-1 CAPLUS

CN Pyrazine, 2,3-diphenyl-5,6-di-2-pyridinyl- (CA INDEX NAME)



L14 ANSWER 207 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:55778 CAPLUS

DOCUMENT NUMBER: 112:55778

TITLE: Alkylation and arylation of pyrazines by organoboron compounds

AUTHOR(S): Ohta, Akihiro; Itoh, Ryoichi; Kaneko, Yasunobu; Koike, Haruo; Yuasa, Kayo

CORPORATE SOURCE: Tokyo Coll. Pharm., Tokyo, 192-03, Japan

SOURCE: Heterocycles (1989), 29(5), 939-45

CODEN: HTCYAM; ISSN: 0385-5414

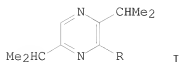
DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 112:55778

GI





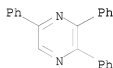
AB By palladium-catalyzed cross-coupling reactions of chloropyrazines with organoboron compds. prepared from Grignard reagents, various alkyl and aryl groups were successfully introduced into the pyrazine ring. E.g., arylation of pyrazine I (R = Cl) with PhBr, Mg, and BF<sub>3</sub>.Et<sub>2</sub>O in Et<sub>2</sub>O in the presence of Pd(PPh<sub>3</sub>)<sub>4</sub> gave 47% pyrazine I (R = Ph).

IT 36476-77-4P 121431-87-6P 121431-88-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

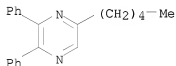
RN 36476-77-4 CAPLUS

CN Pyrazine, 2,3,5-triphenyl- (CA INDEX NAME)



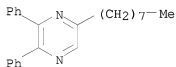
RN 121431-87-6 CAPLUS

CN Pyrazine, 5-pentyl-2,3-diphenyl- (CA INDEX NAME)



RN 121431-88-7 CAPLUS

CN Pyrazine, 5-octyl-2,3-diphenyl- (CA INDEX NAME)



L14 ANSWER 208 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:35897 CAPLUS

DOCUMENT NUMBER: 112:35897

TITLE: Preparation of substituted 2-cyanopyrazines

INVENTOR(S): Yagihara, Tomio; Hatano, Hiromi; Furukawa, Naomichi

PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

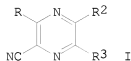
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01172377	A	19890707	JP 1987-329358	19871225
PRIORITY APPLN. INFO.:				
OTHER SOURCE(S):			JP 1987-329358	19871225
GI				
MARPAT 112:35897				

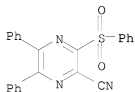


AB The title compds. I [R = R<sub>1</sub>; R<sub>1</sub> = alkyl, alkenyl, alkynyl, (un)substituted aryl, aralkyl, heterocyclyl; R<sub>2</sub>, R<sub>3</sub> = H, alkyl, aryl, heterocyclyl] (II), useful as intermediates for drugs, agrochems., perfumes, and polymers, are prepared by treatment of I (R = SO<sub>2</sub>R<sub>4</sub>; R<sub>4</sub> = alkyl, aralkyl, aryl) (III) with R<sub>1</sub>MgX (X = halo). A THF solution of MeMgBr was added dropwise to a THF solution of III (R<sub>2</sub> = R<sub>4</sub> = Me, R<sub>3</sub> = H), at 0° and the reaction mixture was further stirred at room temperature for 1 h to give 90% II (R<sub>1</sub> = R<sub>2</sub> = Me, R<sub>3</sub> = H).

IT 124629-51-2, 2-Cyano-5,6-diphenyl-3-benzenesulfonylpyrazine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (grignard reaction of, with (hydrocarbyl or heterocyclyl) halides, (hydrocarbyl or heterocyclyl)cyano pyrazines from)

RN 124629-51-2 CAPLUS

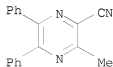
CN Pyrazinecarbonitrile, 5,6-diphenyl-3-(phenylsulfonyl)- (9CI) (CA INDEX NAME)



IT 124629-61-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, by Grignard reaction of (hydrocarbylsulfonyl)cyano pyrazines with (hydrocarbyl or heterocyclyl) halides)

RN 124629-61-4 CAPLUS

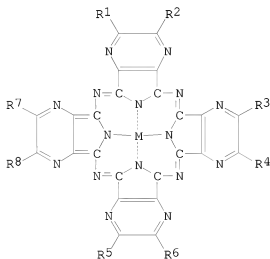
CN Pyrazinecarbonitrile, 3-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



TITLE: Optical recording materials  
 INVENTOR(S): Sakamoto, Mare; Miyazaki, Shuji; Ezaki, Shigeyuki  
 PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01034791	A	19890206	JP 1987-332801	19871228
JP 2514677	B2	19960710		
PRIORITY APPLN. INFO.:			JP 1987-88108	A1 19870410
OTHER SOURCE(S):	MARPAT	111:164314		

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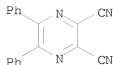


I

AB Phthalocyanine derivs. of the structure I (R1-R8 = H, halo, alkyl, aryl, NO2, alkoxy, CO2H, carboxylic ester; the adjacent pairs of R1-R8 may form organic rings; M = H, metal, the oxide or chloride of a metal, or metals bonded to groups (OR9)p, (SR10)q, (OSiR11R12R13)r where R9-R13 = H, aliphatic hydrocarbyl, aromatic hydrocarbyl, aromatic heterocyclyl; p, q, r = 0-2).

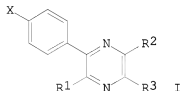
These materials have high sensitivity and are manufactured at low cost. Thus, I (R1, R3-R8 = Ph; R2 = H; M = Mn) in Me2CO was applied on polycarbonate disk and dried to obtain a 900-Å layer. Recording upon the disk and then and reading out with 830-nm lasers produced a signal with a sufficiently high signal-to-noise ratio.

IT 52197-23-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with metalation, phthalocyanine derivs. for optical recording materials from)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 210 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1989:553841 CAPLUS  
 DOCUMENT NUMBER: 111:153841  
 TITLE: Preparation of phenylpyrazines as blood platelet aggregation inhibitors and cyclooxygenase inhibitors  
 INVENTOR(S): Suwabe, Yasushi; Ushijima, Hideto; Hijikuro, Kohshi; Sakuragi, Shiho; Suzuki, Tadahiko; Akita, Yasuo; Ohta, Akihiro  
 PATENT ASSIGNEE(S): Terumo Corp., Japan  
 SOURCE: PCT Int. Appl., 46 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8904308	A1	19890518	WO 1988-JP1141	19881111
W: US				
RW: BE, CH, DE, FR, GB, IT, NL, SE				
JP 01128971	A	19890522	JP 1987-286197	19871112
JP 01128972	A	19890522	JP 1987-286198	19871112
JP 05036435	B	19930531		
JP 01135775	A	19890529	JP 1987-293423	19871120
JP 05036434	B	19930531		
EP 397859	A1	19901122	EP 1988-909824	19881111
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
PRIORITY APPLN. INFO.:			JP 1987-286197	A 19871112
			JP 1987-286198	A 19871112
			JP 1987-293423	A 19871120
			WO 1988-JP1141	W 19881111
OTHER SOURCE(S):		MARPAT 111:153841		
GI				



AB The title compds. (I; X = H, halo, lower alkyl, lower alkoxy, cyano; R1 = H, lower alkyl, p-XC6H4; R2 = H, halo, p-XC6H4; R3 = H, halo, lower alkyl, cyano, naphthylmethyl, CH2C6H4R4, CO2H, lower alkoxy, carbonyl; R4 = H, halo, lower alkylamino; R2R3 to form a cyclohexane or benzene ring, except when R1 = Ph, X = R2 = R3 = H, or X = R1 = H, R2 = Ph, R3 = Me) were prepared as platelet aggregation inhibitors and cyclooxygenase inhibitors. A mixture of 2,3-bis(p-methoxyphenyl)pyrazine 1,4-dioxide and POC13 was

refluxed 30 min to give 76% I (X = OMe, R1 = p-MeOC6H4, R2 = H, R3 = Cl)  
(II). In rabbit platelet rich plasma II inhibited blood platelet  
aggregation induced by arachidonic acid and collagen with IC50 of 3.8  
+ 10<sup>-9</sup> and 9.8 + 10<sup>-9</sup> M, resp.

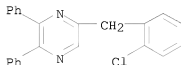
IT 122956-21-2P 122956-22-3P 122956-23-4P  
122956-24-5P 122956-25-6P 122956-26-7P  
122956-27-8P 122956-28-9P 122956-29-0P  
122956-30-3P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);  
BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of, as blood platelet aggregation inhibitor)

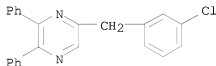
RN 122956-21-2 CAPLUS

CN Pyrazine, 5-[(2-chlorophenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



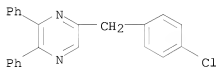
RN 122956-22-3 CAPLUS

CN Pyrazine, 5-[(3-chlorophenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



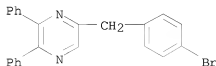
RN 122956-23-4 CAPLUS

CN Pyrazine, 5-[(4-chlorophenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



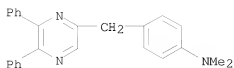
RN 122956-24-5 CAPLUS

CN Pyrazine, 5-[(4-bromophenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)

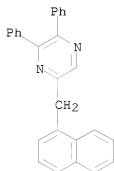


RN 122956-25-6 CAPLUS

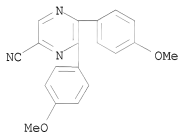
CN Benzenamine, 4-[(5,6-diphenylpyrazinyl)methyl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



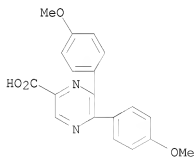
RN 122956-26-7 CAPLUS  
 CN Pyrazine, 5-(1-naphthalenylmethyl)-2,3-diphenyl- (CA INDEX NAME)



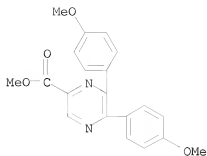
RN 122956-27-8 CAPLUS  
 CN Pyrazinecarbonitrile, 5,6-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



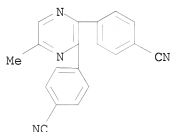
RN 122956-28-9 CAPLUS  
 CN 2-Pyrazinecarboxylic acid, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



RN 122956-29-0 CAPLUS  
 CN Pyrazinecarboxylic acid, 5,6-bis(4-methoxyphenyl)-, methyl ester (9CI)  
 (CA INDEX NAME)



RN 122956-30-3 CAPLUS  
 CN Benzonitrile, 4,4'-(5-methyl-2,3-pyrazinediyl)bis- (CA INDEX NAME)



L14 ANSWER 211 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1989:448088 CAPLUS  
 DOCUMENT NUMBER: 111:48088  
 TITLE: Photoconductive coatings and their use as  
 electrophotographic photoconductors  
 INVENTOR(S): Ishibashi, Setsuo; Fujio, Katsunori  
 PATENT ASSIGNEE(S): Alps Electric Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01028646	A	19890131	JP 1987-184244	19870723
PRIORITY APPLN. INFO.:			JP 1987-184244	19870723

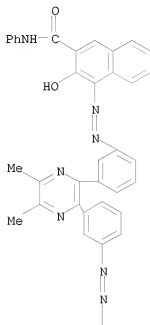
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

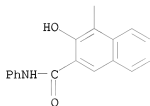
AB The title photoconductors have coating layers containing  $\geq 1$  bisazo pigment of the structure I [A = II, III, IV, V, CH(COMe)CONR<sub>2</sub>; R, R<sub>1</sub>, R<sub>2</sub> = H, lower alkyl, aryl, alkoxy carbonyl, aryloxy carbonyl, acyl, halo, monovalent organic residue; X = benzene ring-condensable atomic group forming (substituted) hydrocarbon rings or aromatic heterocycles; Y = CONR<sub>2</sub>, CO<sub>2</sub>R]. Thus, a coating containing the bisazo pigment VI, butyral resin, and iso-PrOH was applied on an Al plate to give a charge-generating layer, which was

overcoated with a composition containing the hydrazone VII to give a  
photoconductor  
having high sensitivity.  
IT 121519-58-2 121519-59-3  
RL: USES (Uses)  
(electrophotog. photoconductor with charge-generating layer containing)  
RN 121519-58-2 CAPLUS  
CN 2-Naphthalenecarboxamide, 4,4'-[(5,6-dimethyl-2,3-pyrazinediyl)bis(3,1-  
phenyleneazo)]bis[3-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

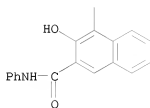
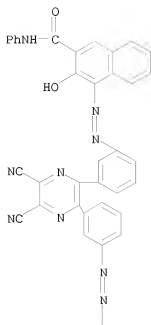


PAGE 2-A

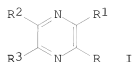


RN 121519-59-3 CAPLUS  
CN 2-Naphthalenecarboxamide, 4,4'-[(5,6-dicyano-2,3-pyrazinediyl)bis(3,1-  
phenyleneazo)]bis[3-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)





L14 ANSWER 212 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1989:439312 CAPLUS  
 DOCUMENT NUMBER: 111:39312  
 TITLE: Alkylation and arylation of pyrazines by organotin compounds  
 AUTHOR(S): Watanabe, Tokuhiko; Hayashi, Kazuhiko; Sakurada, Jun; Ohki, Michiyo; Takamatsu, Noriko; Hirohata, Harumi; Takeuchi, Keiko; Yuasa, Kayo; Ohta, Akihiro  
 CORPORATE SOURCE: Tokyo Coll. Pharm., Tokyo, 192-03, Japan  
 SOURCE: Heterocycles (1989), 29(1), 123-31  
 CODEN: HTCYAM; ISSN: 0385-5414  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 111:39312  
 GI

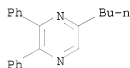


AB Pd-catalyzed cross-coupling reactions of chloropyrazines I (R = Cl, R<sup>1</sup> = H, R<sup>2</sup> = R<sup>3</sup> = Ph; R = Cl, R<sup>1</sup> = R<sup>3</sup> = Et, CHMe<sub>2</sub>, R<sup>2</sup> = H) with Bu<sub>4</sub>Sn gave I (R = Bu) in good yield. By reactions of I (R = Cl) with R<sub>4</sub>Sn (R = alkyl, aryl), prepared in situ from Grignard reagents, I (R = alkyl, aryl) were satisfactorily prepared

IT 121431-79-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, butylation of chloropyrazines)

RN 121431-79-6 CAPLUS

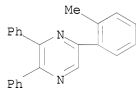
CN Pyrazine, 5-butyl-2,3-diphenyl- (CA INDEX NAME)



IT 121431-82-1P 121431-83-2P 121431-84-3P  
 121431-85-4P 121431-86-5P 121431-87-6P  
 121431-88-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, via alkylation of chloropyrazine)

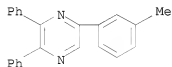
RN 121431-82-1 CAPLUS

CN Pyrazine, 5-(2-methylphenyl)-2,3-diphenyl- (CA INDEX NAME)



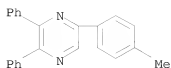
RN 121431-83-2 CAPLUS

CN Pyrazine, 5-(3-methylphenyl)-2,3-diphenyl- (CA INDEX NAME)

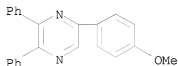


RN 121431-84-3 CAPLUS

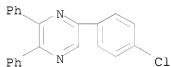
CN Pyrazine, 5-(4-methylphenyl)-2,3-diphenyl- (CA INDEX NAME)



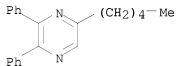
RN 121431-86-4 CAPLUS  
CN Pyrazine, 5-(4-methoxyphenyl)-2,3-diphenyl- (CA INDEX NAME)



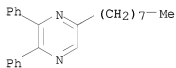
RN 121431-86-5 CAPLUS  
CN Pyrazine, 5-(4-chlorophenyl)-2,3-diphenyl- (CA INDEX NAME)



RN 121431-87-6 CAPLUS  
CN Pyrazine, 5-pentyl-2,3-diphenyl- (CA INDEX NAME)

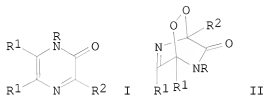


RN 121431-88-7 CAPLUS  
CN Pyrazine, 5-octyl-2,3-diphenyl- (CA INDEX NAME)



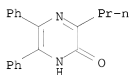
L14 ANSWER 213 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1989:423476 CAPLUS  
DOCUMENT NUMBER: 111:23476  
TITLE: Synthesis of stable 3,6-epidioxypyrazin-2-ones and  
 $\alpha$ -oxo imides by photooxygenation of  
pyrazin-2-ones with singlet oxygen  
AUTHOR(S): Nishio, Takehiko; Tokunaga, Naoko; Kondo, Masaji;  
Omote, Yoshimori  
CORPORATE SOURCE: Dep. Chem., Univ. Tsukuba, Tsukuba, 305, Japan

SOURCE: Journal of the Chemical Society, Perkin Transactions  
 1: Organic and Bio-Organic Chemistry (1972-1999)  
 (1988), (11), 2921-5  
 CODEN: JCPRB4; ISSN: 0300-922X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 111:23476  
 GI

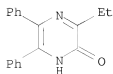


AB Irradiation of the pyrazin-2-ones I (R = Me, R<sub>1</sub> = Ph, R<sub>2</sub> = MeEt, Ph, CH Me<sub>2</sub>, Ph; R = R<sub>1</sub> = R<sub>2</sub> = Me; R = R<sub>2</sub> = Et, R<sub>1</sub> = Ph) in MeOH under O gave the 3,6-epidioxypyrazin-2-ones II (same R's) N-alkyl-N-acyl- $\alpha$ -oxo amides, and the unusual products, N-alkyl- $\alpha$ -acyloxy- $\alpha$ -methoxy amides. The mechanism for the form of these photoproducts is discussed. Furthermore, thermal or photochem. treatment of the 3,6-epidioxypyrazinones II, which could be readily obtained by the reaction of I and singlet O, gave the N-alkyl-N-acyl- $\alpha$ -oxo amides and this reaction would provide a useful synthetic method for the  $\alpha$ -oxo imides.

IT 104369-40-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (alkylation of)  
 RN 104369-40-6 CAPLUS  
 CN 2(1H)-Pyrazinone, 5,6-diphenyl-3-propyl- (CA INDEX NAME)

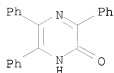


IT 104369-39-3P 104369-41-7P 108981-53-9P  
 120106-61-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 104369-39-3 CAPLUS  
 CN 2(1H)-Pyrazinone, 3-ethyl-5,6-diphenyl- (CA INDEX NAME)



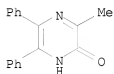
RN 104369-41-7 CAPLUS

CN 2(1H)-Pyrazinone, 3,5,6-triphenyl- (CA INDEX NAME)



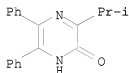
RN 108981-53-9 CAPLUS

CN 2(1H)-Pyrazinone, 3-methyl-5,6-diphenyl- (CA INDEX NAME)



RN 120106-61-8 CAPLUS

CN 2(1H)-Pyrazinone, 3-(1-methylethyl)-5,6-diphenyl- (CA INDEX NAME)



L14 ANSWER 214 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1989:75459 CAPLUS

DOCUMENT NUMBER: 110:75459

TITLE: Synthesis of substituted heterocyclic cyclophanes

AUTHOR(S): Ried, W.; Aboul-Fetouh, S.

CORPORATE SOURCE: Inst. Org. Chem., Univ. Frankfurt/Main, Frankfurt, Fed. Rep. Ger.

SOURCE: Tetrahedron (1988), 44(11), 3399-404

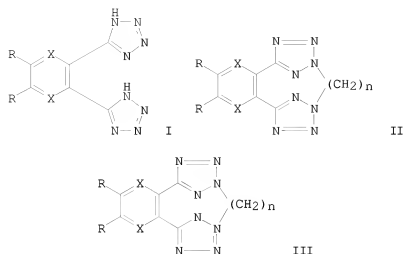
CODEN: TETRAB; ISSN: 0040-4020

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 110:75459

GI

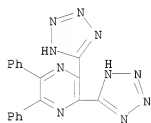


AB The reaction of tetrazoles I ( $X = CH$ ,  $R = H$ ;  $X = N$ ,  $R = H$ ,  $Me$ ,  $Ph$ , 2-pyridyl) with  $Br(CH_2)_n Br$  ( $n = 5, 6, 7, 8, 10$ ) in the presence of  $Et_3N$  gave the corresponding sym. and asym. cyclophanes II and III, which were separated by column chromatog. The crystal structures of II ( $X = N$ ,  $R = Me$ ,  $n = 7$ ) and III ( $X = N$ ,  $R = Me$ ,  $n = 7$ ) were determined

IT 118553-58-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and cyclization of, with dibromoalkanes)

RN 118553-58-5 CAPLUS

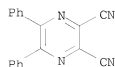
CN Pyrazine, 2,3-diphenyl-5,6-bis(1H-tetrazol-5-yl)- (9CI) (CA INDEX NAME)



IT 52197-23-6 118553-90-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with sodium azide and ammonium chloride, tetrazole derivative from)

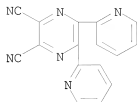
RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)

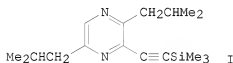


RN 118553-90-5 CAPLUS

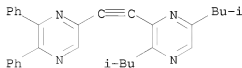
CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



L14 ANSWER 215 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1989:57620 CAPLUS  
DOCUMENT NUMBER: 110:57620  
TITLE: Coupling reactions of aryl and heteroaryl halides with  
a [(trimethylsilyl)ethynyl]pyrazine  
AUTHOR(S): Akita, Yasuo; Kanekawa, Hideta; Kawasaki, Tatsuya;  
Shiratori, Ikuko; Ohta, Akihiro  
CORPORATE SOURCE: Tokyo Coll. Pharm., Tokyo, 192-03, Japan  
SOURCE: Journal of Heterocyclic Chemistry (1988), 25(3), 975-7  
CODEN: JHTCAD; ISSN: 0022-152X  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 110:57620  
GI



AB By the coupling reactions of trimethylsilylacetylene and  
2-chloro-3,6-diisobutylpyrazine, 3,6-diisobutyl-2-  
trimethylsilylethynylpyrazine (I) or 1,2-bis(3,6-diisobutylpyrazin-2-  
yl)acetylene was obtained, depending on the solvent used. I coupled with  
various aryl and heteroaryl halides to give 1-aryl-2-pyrazinylacetylenes.  
IT 118617-31-5P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 118617-31-5 CAPLUS  
CN Pyrazine, 5-[[3,6-bis(2-methylpropyl)pyrazinyl]ethynyl]-2,3-diphenyl-  
(9CI) (CA INDEX NAME)



L14 ANSWER 216 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1988:617911 CAPLUS  
DOCUMENT NUMBER: 109:217911

TITLE: Electrochemical reduction of Z- $\alpha$ -amino- $\beta$ -nitrostilbene in neutral and acidic media

AUTHOR(S): Hayes-Majstorovic, Jasna; Guernet-Nivaud, Elisabeth; Merienne, Claude; Guernet, Michel; Viel, Claude

CORPORATE SOURCE: Lab. Chim. Anal. Electrochim. Org., Fac. Pharm., Chatenay-Malabry, 92296, Fr.

SOURCE: Comptes Rendus de l'Academie des Sciences, Serie II: Mecanique, Physique, Chimie, Sciences de la Terre et de l'Univers (1988), 307(5), 483-8  
CODEN: CRAMED; ISSN: 0764-4450

DOCUMENT TYPE: Journal

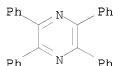
LANGUAGE: French

AB In MeCN-H<sub>2</sub>O mixture, Z- $\alpha$ -amino- $\beta$ -nitrostilbene undergoes electrochem. transformation at the dropping Hg electrode into 2,3,5,6-tetraphenylpyrazine and 2,4,5-triphenylimidazole in a neutral medium. In acidic conditions,  $\alpha$ -aminodesoxybenzoin is obtained with benzil and desoxybenzoin as secondary products. A reduction mechanism is suggested.

IT 642-04-6P, 2,3,5,6-Tetraphenylpyrazine  
RL: FORM (Formation, nonpreparative); PREP (Preparation)  
(formation of, in electrochem. reduction of aminonitrostilbene in neutral media)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 217 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:509707 CAPLUS

DOCUMENT NUMBER: 109:109707

TITLE: Qualitative studies of reactions of furyl-substituted pyrazine and quinoxaline ligands towards some metal ions

AUTHOR(S): Khuhawar, M. Y.; Memon, Z. P.

CORPORATE SOURCE: Inst. Chem., Univ. Sind, Jamshoro, Pak.

SOURCE: Pakistan Journal of Scientific and Industrial Research (1987), 30(5), 338-42  
CODEN: PSIRAA; ISSN: 0030-9885

DOCUMENT TYPE: Journal

LANGUAGE: English

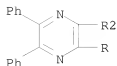
AB Five new reagents, 2,3-bis(2-furyl)-5-methyl-5,6-dihydropyrazine, 2,3-bis(2-furyl)-5-methylpyrazine, 2,3-bis(2-furyl)-5,6-dihydropyrazine, 2,3-bis(2-furyl)-5,6-diphenylpyrazine, and 2,3-bis(2-furyl)quinoxaline have been prepared. The reagents have been characterized using IR, UV and mass spectroscopic techniques. Iron(II) develops brown and iron(III), copper(I), copper(II), cobalt(II), and nickel(II) develop yellow color or turbidity within 1-4 h at room temperature. The color reactions have also been studied spectrophotometrically.

IT 21798-27-6D, transition metal complexes  
RL: PRP (Properties)  
(UV of)

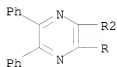
RN 21798-27-6 CAPLUS

CN Pyrazine, 2,3-di-2-furanyl-5,6-diphenyl- (9CI) (CA INDEX NAME)

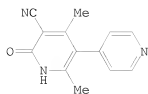




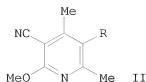
IT 21798-27-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation, spectra, and complexation of, with early transition metal  
 cations)  
 RN 21798-27-6 CAPLUS  
 CN Pyrazine, 2,3-di-2-furanyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 218 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1988:186699 CAPLUS  
 DOCUMENT NUMBER: 108:186699  
 TITLE: An efficient synthesis of arylpyrazines and  
 bipyridines  
 AUTHOR(S): Thompson, Wayne J.; Jones, James H.; Lyle, Paulette  
 A.; Thies, J. Eric  
 CORPORATE SOURCE: Merck Sharp and Dohme Res. Lab., West Point, PA,  
 19486, USA  
 SOURCE: Journal of Organic Chemistry (1988), 53(9), 2052-5  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 108:186699  
 GI



I



II

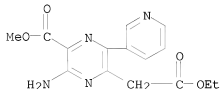
AB The coupling of chloro- or bromopyrazines and -pyridines with areneboronic acids in the presence of Pd(0) catalysts is described. By use of the appropriate catalyst, the coupling of pyridineboronic acids was also achieved. A convergent synthesis of the previously unknown 4-Me derivative of the cardiotonic milrinone (I) is also described. Thus, coupling of bromopyridine II (R = Br) with 4-pyridineboronic acid in the presence of Pd(OAc)<sub>2</sub> and 1,1'-bis(diphenylphosphino)ferrocene gave 22% of the substituted bipyrindine II (R = 4-pyridyl). Hydrolysis of II (R = 4-pyridyl) gave 85% I.

IT 113892-89-0P 113892-90-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

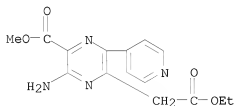
RN 113892-89-0 CAPLUS

CN Pyrazineacetic acid, 6-amino-5-(methoxycarbonyl)-3-(3-pyridinyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 113892-90-3 CAPLUS

CN Pyrazineacetic acid, 6-amino-5-(methoxycarbonyl)-3-(4-pyridinyl)-, ethyl ester (9CI) (CA INDEX NAME)



L14 ANSWER 219 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:94508 CAPLUS

DOCUMENT NUMBER: 108:94508

TITLE: Ethylation of pyrazines using alkylmetals such as triethylaluminum, diethylzinc, and triethylborane  
Ohta, Akihiro; Ohta, Masakatsu; Igarashi, Yoshiaki; Saeki, Kaemi; Yuasa, Kayo; Mori, Tomoko

CORPORATE SOURCE: Tokyo Coll. Pharm., Tokyo, 192-03, Japan

SOURCE: Heterocycles (1987), 26(9), 2449-54

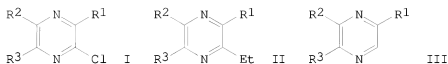
CODEN: HETCYAM; ISSN: 0385-5414

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 108:94508

GI

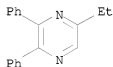


AB Chloropyrazines I (R1 = alkyl, H, Ph; R2 = H, Ph, Cl; R3 = alkyl, Ph, H) were treated with Et3Al, Et2Zn, and Et3B and catalyst [Pd(PPh3)4 and Pd(PPh3)2Cl2] to give alkylated products II and dechlorinated products III (R2 = H, Ph). The best results were obtained with Et3B.

IT 36932-95-3P  
RL: SPN (Synthetic preparation); PREP (Preparation of preparation of)

RN 36932-95-3 CAPLUS

CN Pyrazine, 5-ethyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 220 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:75265 CAPLUS

DOCUMENT NUMBER: 108:75265

TITLE: Electron transfer reactions. Reaction of A2-oxazolin-5-ones and related substrates with potassium

AUTHOR(S): Muneer, Mohammed; Tikare, Ravindra K.; Kamat, Prashant V.; George, Manapurathu V.

CORPORATE SOURCE: Dep. Chem., Indian Inst. Technol., Kanpur, 208016, India

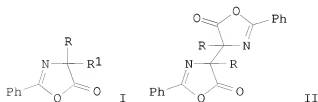
SOURCE: Canadian Journal of Chemistry (1987), 65(7), 1624-30  
CODEN: CJCHAG; ISSN: 0008-4042

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 108:75265

GI



AB The reaction of several A2-oxazolin-5-ones I (R = Ph, PhCH2, R1 = H;

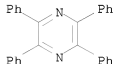
R = R1 = Ph; RR1 = PhCH) and bioxazolinones II (R = Ph, PhCH2) with potassium in THF has been investigated. Thus, treatment of I (R = Ph, R1 = H) with potassium in THF gave a mixture of dibenzamide, N-benzoyl-C-phenylglycine and C-phenylglycine. A higher yield of dibenzamide was obtained, together with benzoic acid, when the reaction was carried out in THF saturated with oxygen. Reasonable mechanisms, involving the initial formation of radical anion intermediates and their subsequent transformation to give the observed products, have been suggested. Potassium superoxide oxidation of some of these substrates gives similar product mixts. Cyclic voltammetric studies have been carried out to measure the reduction potentials I and II in the generation of their radical anions. The radical anions of these substrates were also generated pulse radiolytically in methanol and their spectra showed absorption maximum in the region 295-350 nm.

IT 642-04-6P

RL: FORM (Formation, nonpreparative); PREP (Preparation)  
(formation of, in reaction of oxazoline derivative with potassium)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 221 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:5440 CAPLUS

DOCUMENT NUMBER: 108:5440

TITLE: Electron-transfer reactions. Reaction of nitrones with potassium

AUTHOR(S): Ashok, Konda; Scaria, Pallikkaparambil M.; Kamat, Prashant V.; George, Manapurathu V.  
CORPORATE SOURCE: Dep. Chem., Indian Inst. Technol., Kanpur, 208016, India

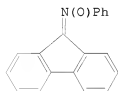
SOURCE: Canadian Journal of Chemistry (1987), 65(9), 2039-49  
CODEN: CJCHAG; ISSN: 0008-4042

DOCUMENT TYPE: Journal

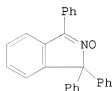
LANGUAGE: English

OTHER SOURCE(S): CASREACT 108:5440

GI



II

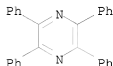


III

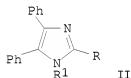
AB Treatment of RC6H4CH:N(O)C6H4R1 (I; R = H, o-OH, p-Me, R1 = H; R = H, R1 = p-Me) with K in THF gives rise to radical anion and dianion intermediates, which undergo further transformations. Thus, I give RC6H4CHO, RC6H4CO2H, and azobenzenes. However, keto nitrones II and Ph2C:N(O)Ph give deoxygenation products. PhCH:N(O)CH2Ph gives a mixture of PhCO2H,

PhCH<sub>2</sub>CH<sub>2</sub>Ph, PhCH<sub>2</sub>N(OH)(CHPh)<sub>2</sub>N(O):CHPh, and tetraphenylpyrazine. Isoindole N-oxide III gives no isolable product. The reduction potentials of I-III for 1- and 2-electron transfers were measured by cyclic voltammetry. The electronic absorption spectra of the radical ions and dianions were recorded.

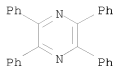
IT 642-04-6P, 2,3,5,6-Tetraphenylpyrazine  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, in electron transfer reaction of aryl nitrene)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



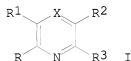
L14 ANSWER 222 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1987:477697 CAPLUS  
 DOCUMENT NUMBER: 107:77697  
 TITLE: 4,5-Diphenylimidazoles from the cyclization of benzil N-alkylmonohydrazones  
 AUTHOR(S): Collibee, William L.; Anselme, Jean Pierre  
 CORPORATE SOURCE: Dep. Chem., Univ. Massachusetts, Boston, MA, 02125, USA  
 SOURCE: Bulletin des Societes Chimiques Belges (1986), 95(8), 655-62  
 CODEN: BSCBAG; ISSN: 0037-9646  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 107:77697  
 GI



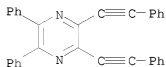
AB Condensation of PhCOCOPh with RCH<sub>2</sub>NR<sub>1</sub>NH<sub>2</sub> [R, R<sub>1</sub> = H, Me, Ph, PhCH<sub>2</sub>; RR<sub>1</sub> = (CH<sub>2</sub>)<sub>n</sub>; n = 3-5] gave PhCOPh:NNR<sub>1</sub>CH<sub>2</sub>R (I) in 22-91% yields. The thermal cyclization of I gave diphenylimidazoles II in 58-95% yields. The mechanism of the cyclization is discussed.  
 IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



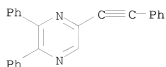
L14 ANSWER 223 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1987:439748 CAPLUS  
 DOCUMENT NUMBER: 107:39748  
 TITLE: Cross-coupling reaction of chloropyrazines with acetylenes  
 AUTHOR(S): Akita, Yasuo; Inoue, Akira; Ohta, Akihiro  
 CORPORATE SOURCE: Tokyo Coll. Pharm., Tokyo, 192-03, Japan  
 SOURCE: Chemical & Pharmaceutical Bulletin (1986), 34(4), 1447-58  
 CODEN: CPBTAL; ISSN: 0009-2363  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 107:39748  
 GI



AB Various chloropyrazines I (R = Cl; R1, R3 = alkyl, Ph, Cl; R2 = H, Ph, Cl; X = N, NO) were subjected to cross-coupling reaction with acetylenes, such as phenylacetylene, 1-hexyne and propargyl alc., in the presence of palladium catalysts, to give the corresponding coupling products in good yields. It was found that Pd(PPh3)4 can catalyze the reaction of chloroalkylpyrazines, and that a combination of Pd(PPh3)2Cl2 and CuI preferentially catalyzes the reaction of chlorophenylpyrazines.  
 IT 75163-70-1P 109191-80-2P 109191-87-9P  
 109191-94-8P 109192-00-9P 109192-06-5P  
 109192-10-1P 109192-23-6P 109192-32-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 75163-70-1 CAPLUS  
 CN Pyrazine, 2,3-diphenyl-5,6-bis(2-phenylethynyl)- (9CI) (CA INDEX NAME)

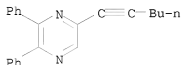


RN 109191-80-2 CAPLUS  
 CN Pyrazine, 2,3-diphenyl-5-(phenylethynyl)- (9CI) (CA INDEX NAME)



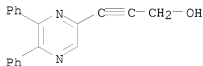
RN 109191-87-9 CAPLUS

CN Pyrazine, 5-(1-hexynyl)-2,3-diphenyl- (9CI) (CA INDEX NAME)



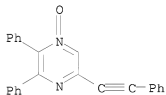
RN 109191-94-8 CAPLUS

CN 2-Propyn-1-ol, 3-(5,6-diphenylpyrazinyl)- (9CI) (CA INDEX NAME)



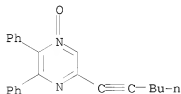
RN 109192-00-9 CAPLUS

CN Pyrazine, 2,3-diphenyl-5-(phenylethynyl)-, 1-oxide (9CI) (CA INDEX NAME)



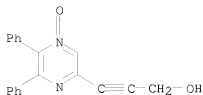
RN 109192-06-5 CAPLUS

CN Pyrazine, 5-(1-hexynyl)-2,3-diphenyl-, 1-oxide (9CI) (CA INDEX NAME)

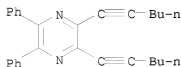


RN 109192-10-1 CAPLUS

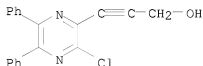
CN 2-Propyn-1-ol, 3-(4-oxido-5,6-diphenylpyrazinyl)- (9CI) (CA INDEX NAME)



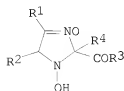
RN 109192-23-6 CAPLUS  
 CN Pyrazine, 2,3-di-1-hexynyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



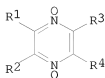
RN 109192-32-7 CAPLUS  
 CN 2-Propyn-1-ol, 3-(3-chloro-5,6-diphenylpyrazinyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 224 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1987:156408 CAPLUS  
 DOCUMENT NUMBER: 106:156408  
 TITLE: Interaction of 1,2-hydroxylamino oximes with 1,2-diketones. Transformation of 2-acyl-1-hydroxy-3-imidazoline 3-oxides into pyrazine 1,4-dioxides  
 AUTHOR(S): Grigor'eva, L. N.; Tikhonov, A. Ya.; Amitina, S. A.; Volodarskii, L. B.; Korobeinicheva, I. K.  
 CORPORATE SOURCE: Novosib. Inst. Org. Khim., Novosibirsk, 630090, USSR  
 SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (1986), (3), 331-8  
 CODEN: KGSSAQ; ISSN: 0453-8234  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 OTHER SOURCE(S): CASREACT 106:156408  
 GI



I

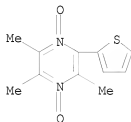


II

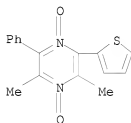


AB Cyclocondensation of R1C(:NHOH)CH(NHOH)R2 (R1 = Ph, Me, 2-furyl, 2-thienyl, 5-nitro-2-furyl; R2 = H, Me) with R3COCOR4 [R3 = Me, Ph, 2-thienyl, 2-furyl; R4 = Me; R3R4 = (CH2)4] gave, depending on reaction conditions, 47-80% imidazolines I and 14-82% pyrazine dioxides II.

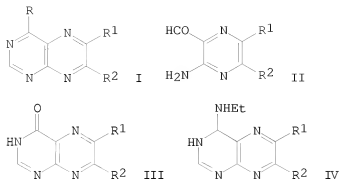
IT 107486-68-0P 107486-69-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 107486-68-0 CAPLUS  
 CN Pyrazine, trimethyl-2-thienyl-, 1,4-dioxide (9CI) (CA INDEX NAME)



RN 107486-69-1 CAPLUS  
 CN Pyrazine, 2,6-dimethyl-3-phenyl-5-(2-thienyl)-, 1,4-dioxide (CA INDEX NAME)



L14 ANSWER 225 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1987:138398 CAPLUS  
 DOCUMENT NUMBER: 106:138398  
 TITLE: Alkylamination of pteridines by primary alkylamines-potassium permanganate  
 AUTHOR(S): Sladowska, H.; Van Veldhuizen, A.; Van der Plas, H. C.  
 CORPORATE SOURCE: Lab. Org. Chem., Agric. Univ., Wageningen, 6703 BC, Neth.  
 SOURCE: Journal of Heterocyclic Chemistry (1986), 23(3), 843-7  
 CODEN: JHTCAD; ISSN: 0022-152X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 106:138398  
 GI



AB Reaction of pteridines I (R = R<sub>1</sub> = H; R<sub>2</sub> = Ph, 4-MeOC<sub>6</sub>H<sub>4</sub>; R<sub>1</sub> = R<sub>2</sub> = Ph) with EtNH<sub>2</sub> and Me<sub>3</sub>CNH<sub>2</sub> in the presence of KMnO<sub>4</sub> leads to the introduction of the ethylamino or t-butylamino group at C-4 to give I (R = EtNH, Me<sub>3</sub>CNH). With EtNH<sub>2</sub>/KMnO<sub>4</sub> 2-amino-3-formylpyrazines II are obtained as byproducts. With Me<sub>3</sub>CNH<sub>2</sub>/KMnO<sub>4</sub> 4-pteridinones III are the byproducts. <sup>1</sup>H NMR studies showed that at room temperature ethylamine easily gives a σ-adduct at C-4, yielding a 4-(ethylamino)-3,4-dihydropteridine derivative IV. T-butylamine, however, only gives C-4 addition at low temperature, i.e.

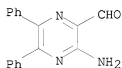
at -40°. This adduct dissocs. at room temperature PrNH<sub>2</sub> and BuNH<sub>2</sub> show the same behavior as EtNH<sub>2</sub>.

IT 107427-47-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 107427-47-4 CAPLUS

CN Pyrazinecarboxaldehyde, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 226 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1987:119534 CAPLUS

DOCUMENT NUMBER: 106:119534

TITLE: Pteridines. LXXVIII. Reactions and properties of 4-thiolumazine derivatives

AUTHOR(S): Lutz, Herman; Pfeleiderer, Wolfgang

CORPORATE SOURCE: Fak. Chem., Univ. Konstanz, Konstanz, D-7750, Fed. Rep. Ger.

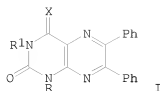
SOURCE: Croatica Chemica Acta (1986), 59(1), 199-220

CODEN: CCACAA; ISSN: 0011-1643

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



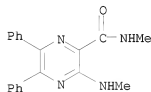
AB The 4-thioxo function in the 6,7-diphenyl-4-thiolumazines I (X = S, R, R1 = H, Me) showed easy displacement by nucleophiles under mild conditions. Special structural and electronic features became obvious with I (X = S, R = H, R1 = Me), which reacted analogously to I (X = S, R = R1 = Me) with amines to I (X = NH, NMe, NEt, NBu, NNHPh, NHHMe, NNMePh). The latter compds. are very light-sensitive and react by photooxidn. to give I (X = O). Nucleophilic displacement by alkoxides under HgBr<sub>2</sub> catalysis yielded the unusual 4,4-di-O-alkyl acetals I [X = (OMe)<sub>2</sub>, OCH<sub>2</sub>CH<sub>2</sub>O]. The acetal function is prone to easy substitution by C-H acidic compds., giving I [X = C(CN)<sub>2</sub>] from I [X = (OMe)<sub>2</sub>].

IT 25472-83-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 25472-83-7 CAPLUS

CN Pyrazinecarboxamide, N-methyl-3-(methlamino)-5,6-diphenyl- (8CI, 9CI)  
(CA INDEX NAME)



L14 ANSWER 227 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1987:111426 CAPLUS

DOCUMENT NUMBER: 106:111426

TITLE: Chromogenic compounds for pressure-sensitive and thermal copying processes

INVENTOR(S): Hall, Nigel

PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK

SOURCE: Eur. Pat. Appl., 52 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

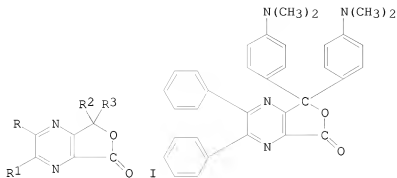
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 192328	A1	19860827	EP 1986-300305	19860117
EP 192328	B1	19900509		
R: CH, DE, FR, GB, IT, LI				
JP 61195164	A	19860829	JP 1986-31036	19860217
PRIORITY APPLN. INFO.:				
OTHER SOURCE(S):			GB 1985-4631	A 19850222
MARPAT 106:111426				

GI



AB Chromogenic pyrazine derivs. I [R, R1 = H, alkenyl, alkoxy, aryl, etc. provided that R and R1 are not H at the same time; R2 and R3 = heterocyclic ring having aryl group annealed through a conjugated N linkage a homocyclic aryl group having substituent NR4R5; R4, R5 = H, R4 and R5 together with the N to which they are joined may form an heterocyclic ring provided R4 and R5 = H at the same time] are described for thermal recording materials and pressure-sensitive copying papers with improved lightfastness. Thus, a thermal recording paper was prepared by coating with a composition containing II and bisphenol A as developer to give green colored images with excellent lightfastness.

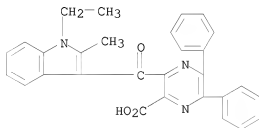
IT 105490-93-5P 105490-95-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in preparation of chromogenic pyrazine derivative)

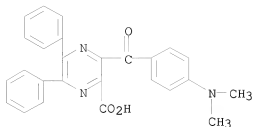
RN 105490-93-5 CAPLUS

CN Pyrazinecarboxylic acid, 3-[(1-ethyl-2-methyl-1H-indol-3-yl)carbonyl]-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 105490-95-7 CAPLUS

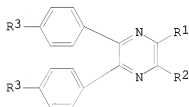
CN Pyrazinecarboxylic acid, 3-[4-(dimethylamino)benzoyl]-5,6-diphenyl- (9CI) (CA INDEX NAME)



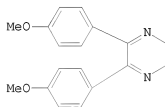
L14 ANSWER 228 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1987:102321 CAPLUS  
 DOCUMENT NUMBER: 106:102321  
 TITLE: Pyrazine derivatives  
 INVENTOR(S): Wakabayashi, Toshio; Hasegawa, Hirokazu; Ohta, Akihiro  
 PATENT ASSIGNEE(S): Terumo Corp., Japan  
 SOURCE: Eur. Pat. Appl., 30 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 194686	A1	19860917	EP 1986-103407	19860313
EP 194686	B1	19891220		
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
JP 62005970	A	19870112	JP 1986-48560	19860307
JP 62270564	A	19871124	JP 1986-279871	19860307
JP 06015533	B	19940302		
JP 63010768	A	19880118	JP 1986-279872	19861126
JP 05015707	B	19930302		
US 4788197	A	19881129	US 1988-170692	19880314
PRIORITY APPLN. INFO.:			JP 1985-52115	A 19850315
			JP 1986-48560	A1 19860307
			US 1986-844103	A1 19860314

OTHER SOURCE(S): CASREACT 106:102321; MARPAT 106:102321  
 GI



I



II

AB The title compds. I [R1 = H, alkyl; R2 = alkyl, (substituted) PhCH2, thienylmethyl; R3 = H, halo, alkyl, alkoxy, dialkylamino] were prepared as blood platelet aggregation inhibitors. Thus, dihydropyrazine II was condensed with Me2CO to afford I (R1 = H, R2 = CHMe2, R3 = OMe), which effectively inhibited platelet aggregation with an IC50 of 2.5 + 10-8 M.

IT 106615-25-2P 106615-27-4P 106615-28-5P  
 106615-29-6P 106615-30-9P 106615-31-0P

106615-32-1P 106615-34-3P 106615-35-4P

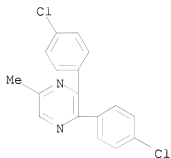
106615-37-6P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, as platelet aggregation inhibitor and antiinflammatory)

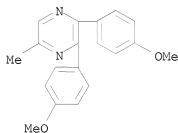
RN 106615-25-2 CAPLUS

CN Pyrazine, 2,3-bis(4-chlorophenyl)-5-methyl- (CA INDEX NAME)



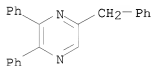
RN 106615-27-4 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-methyl- (CA INDEX NAME)



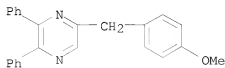
RN 106615-28-5 CAPLUS

CN Pyrazine, 2,3-diphenyl-5-(phenylmethyl)- (CA INDEX NAME)



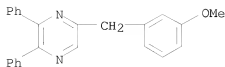
RN 106615-29-6 CAPLUS

CN Pyrazine, 5-[(4-methoxyphenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



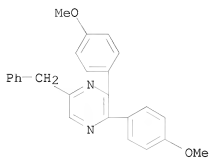
RN 106615-30-9 CAPLUS

CN Pyrazine, 5-[(3-methoxyphenyl)methyl]-2,3-diphenyl- (CA INDEX NAME)



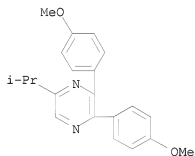
RN 106615-31-0 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-(phenylmethyl)- (CA INDEX NAME)



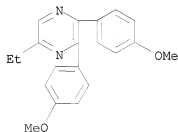
RN 106615-32-1 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-(1-methylethyl)- (CA INDEX NAME)



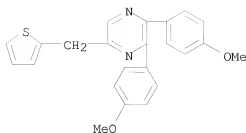
RN 106615-34-3 CAPLUS

CN Pyrazine, 5-ethyl-2,3-bis(4-methoxyphenyl)- (CA INDEX NAME)

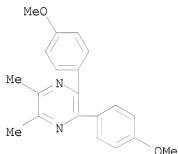


RN 106615-35-4 CAPLUS

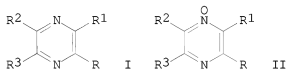
CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5-(2-thienylmethyl)- (CA INDEX NAME)



RN 106615-37-6 CAPLUS  
 CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-dimethyl- (CA INDEX NAME)



L14 ANSWER 229 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1987:84547 CAPLUS  
 DOCUMENT NUMBER: 106:84547  
 TITLE: Coupling reaction of chloropyrazines and their N-oxides with tetraphenyltin  
 AUTHOR(S): Ohta, Akihiro; Ohta, Masakatsu; Watanabe, Tokuhiko  
 CORPORATE SOURCE: Tokyo Coll. Pharmacy, Hachioji, 192-03, Japan  
 SOURCE: Heterocycles (1986), 24(3), 785-92  
 CODEN: HTCYAM; ISSN: 0385-5414  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 106:84547  
 GI



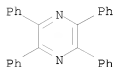
AB Coupling reaction of pyrazines I (R = Cl, R1 = R3, Me, Et, CHMe2, CH2CHMe2, R2 = H, Cl; R1 = H, Cl, R2 = R3 = Ph, R1 = R2 = Ph, R3 = H, Cl) with Ph4Sn gave phenylpyrazines I(R = Ph) in 16-86% yields. Similarly, chloropyrazine N-oxides II (R = Cl) also gave phenylpyrazine N-oxides II (R = Ph) in 45-74% yields with Ph4Sn.

IT 642-04-6P 36476-77-4P 106861-08-9P  
 106861-09-0P

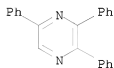
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and NMR of)



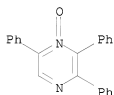
RN 642-04-6 CAPLUS  
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



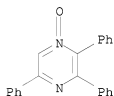
RN 36476-77-4 CAPLUS  
CN Pyrazine, 2,3,5-triphenyl- (CA INDEX NAME)



RN 106861-08-9 CAPLUS  
CN Pyrazine, triphenyl-, 4-oxide (9CI) (CA INDEX NAME)

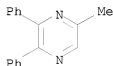


RN 106861-09-0 CAPLUS  
CN Pyrazine, triphenyl-, 1-oxide (9CI) (CA INDEX NAME)

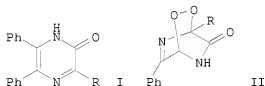


L14 ANSWER 230 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1987:78766 CAPLUS  
DOCUMENT NUMBER: 106:78766  
TITLE: 2,3-Diphenyl-5-methylpyrazine as platelet aggregation inhibitor  
INVENTOR(S): Wakabayashi, Toshio; Hasegawa, Hirokazu; Ota, Akihiro  
PATENT ASSIGNEE(S): Terumo Corp., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

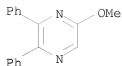
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 61212522	A	19860920	JP 1985-52116	19850315
PRIORITY APPLN. INFO.:				JP 1985-52116	19850315
AB	The title compound (I) inhibits blood platelet aggregation. I at 1.4 + 10 <sup>-6</sup> mol and 2.3 + 10 <sup>-5</sup> mol gave 50% inhibition of platelet aggregation induced by 50 $\mu$ m arachidonic acid and 2.3 + 10 <sup>-5</sup> mol collagen, resp.				
IT	78605-07-9 RL: BIOL (Biological study) (blood platelet aggregation inhibitor)				
RN	78605-07-9 CAPLUS				
CN	Pyrazine, 5-methyl-2,3-diphenyl- (9CI) (CA INDEX NAME)				



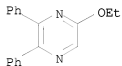
L14 ANSWER 231 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1986:533848 CAPLUS  
 DOCUMENT NUMBER: 105:133848  
 TITLE: Photooxygenation of N-unsubstituted 2-pyrazinones and alkoxy pyrazines  
 AUTHOR(S): Nishio, Takehiko; Kondo, Masaji; Omote, Yoshimori  
 CORPORATE SOURCE: Dep. Chem., Univ. Tsukuba, Sakura, 305, Japan  
 SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1985), (11), 2497-9  
 CODEN: JCPRB4; ISSN: 0300-922X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 105:133848  
 GI



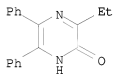
AB Dye-sensitized photooxygenation of N-unsubstituted pyrazinones I (R = Et, Pr, Ph) afforded the endoperoxides II in 61-72% yield. When heated, II decomposed to give the unsym. imides PhCONHCOCOR accompanied by loss of benzonitrile. 2-Alkoxy pyrazines also reacted with singlet oxygen to yield the endoperoxides.  
 IT 34121-90-9 104369-45-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photooxdn. of)  
 RN 34121-90-9 CAPLUS  
 CN Pyrazine, 5-methoxy-2,3-diphenyl- (8CI, 9CI) (CA INDEX NAME)



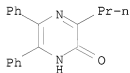
RN 104369-45-1 CAPLUS  
 CN Pyrazine, 5-ethoxy-2,3-diphenyl- (CA INDEX NAME)



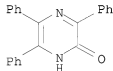
IT 104369-39-3 104369-40-6 104369-41-7  
 RL: PROC (Process)  
 (photooxygenation of)  
 RN 104369-39-3 CAPLUS  
 CN 2(1H)-Pyrazinone, 3-ethyl-5,6-diphenyl- (CA INDEX NAME)



RN 104369-40-6 CAPLUS  
 CN 2(1H)-Pyrazinone, 5,6-diphenyl-3-propyl- (CA INDEX NAME)

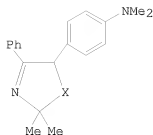


RN 104369-41-7 CAPLUS  
 CN 2(1H)-Pyrazinone, 3,5,6-triphenyl- (CA INDEX NAME)



L14 ANSWER 232 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1986:406488 CAPLUS  
 DOCUMENT NUMBER: 105:6488  
 TITLE: Palladium-catalyzed coupling reaction of  
 chloropyrazines with indole





I, X=O

IV, X=S

AB The title oxazoline I was prepared in a 1-pot reaction of PhCOCH(OH)C<sub>6</sub>H<sub>4</sub>NMe<sub>2</sub>-4 (II) with Me<sub>2</sub>CO and NH<sub>3</sub>. The preparation of intermediate II is the 1st example of an acid-catalyzed transformation of the stable benzoin PhCH(OH)COC<sub>6</sub>H<sub>4</sub>NMe<sub>2</sub>-4 (III) into the less stable II. Sulfuration of I with P<sub>2</sub>S<sub>5</sub> gave thiazoline IV. Resolution of I was accomplished only by converting I into the trimethylanilinium salts of (-)- and (+)-10-camphorsulfonic acid, decomposing these with NaOAc in boiling PhMe, and removing the 3rd Me from the quaternary ammonium salt as AcOMe to give (-)-(5S)-I and (+)-(5R)-I. The absolute configurations were determined by

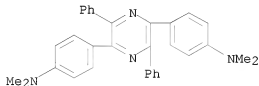
x-ray anal. of the quaternary ammonium salt of the (-)-camphorsulfonic acid.

IT 7532-77-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 7532-77-6 CAPLUS

CN Benzenamine, 4,4'-(3,6-diphenyl-2,5-pyrazinediyl)bis[N,N-dimethyl- (9CI)  
(CA INDEX NAME)



L14 ANSWER 234 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1985:533307 CAPLUS

DOCUMENT NUMBER: 103:133307

TITLE: Doped pyrazine polymer

PATENT ASSIGNEE(S): Agency of Industrial Sciences and Technology, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

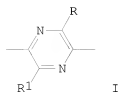
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60038462	A	19850228	JP 1983-146705	19830812
JP 01025508	B	19890518		
PRIORITY APPLN. INFO.:			JP 1983-146705	19830812

GI

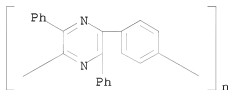


AB A conductive doped pyrazine polymer consist of an electron acceptor and polymer(s) having a repeating unit of I, where R,R' = H, Cl-5 alkyl, or Ph. The preparation of the polymer is also described.

IT 31347-80-5  
 RL: USES (Uses)  
 (elec. conductors from doped)

RN 31347-80-5 CAPLUS

CN Poly[(3,6-diphenyl-2,5-pyrazinediyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



L14 ANSWER 235 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1985:220829 CAPLUS

DOCUMENT NUMBER: 102:220829

TITLE: Reaction of chloropyrazine N-oxides with trimethylaluminum

AUTHOR(S): Ohta, Akihiro; Inoue, Akira; Ohtsuka, Kimie; Watanabe, Tokuhiko

CORPORATE SOURCE: Tokyo Coll. Pharm., Hachioji, 192-03, Japan

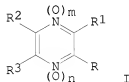
SOURCE: Heterocycles (1985), 23(1), 133-7  
 CODEN: HTCYAM; ISSN: 0385-5414

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 102:220829

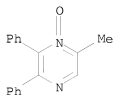
GI



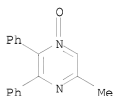
AB Chloropyrazine oxides I (R = Cl, n = 1, m = 0, n = 0, m = 1, R1, R3 = H, Me, Et, Me2CH, Me2CHCH2, R2 = H, Ph) underwent substitution reaction with AlMe3 in 1,4-dioxane, catalyzed by Pd(PPh3)4, to give 76-96% of the corresponding I (R = Me).

IT 96549-07-4P 96549-13-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)

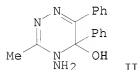
(preparation of)  
RN 96549-07-4 CAPLUS  
CN Pyrazine, 5-methyl-2,3-diphenyl-, 4-oxide (9CI) (CA INDEX NAME)



RN 96549-13-2 CAPLUS  
CN Pyrazine, 5-methyl-2,3-diphenyl-, 1-oxide (9CI) (CA INDEX NAME)



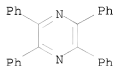
L14 ANSWER 236 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1985:166709 CAPLUS  
DOCUMENT NUMBER: 102:166709  
TITLE: Hydrazidines, IV. Reaction of hydrazidines with  
1,2-bifunctional compounds  
AUTHOR(S): Neunhoeffer, Hans; Koehler, Gernot; Degen, Hans  
Juergen  
CORPORATE SOURCE: Inst. Org. Chem. Biochem., Tech. Hochsch. Darmstadt,  
Darmstadt, D-6100, Fed. Rep. Ger.  
SOURCE: Liebigs Annalen der Chemie (1985), (1), 78-89  
CODEN: LACHDL; ISSN: 0170-2041  
DOCUMENT TYPE: Journal  
LANGUAGE: German  
OTHER SOURCE(S): CASREACT 102:166709  
GI



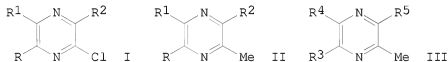
II

AB H2NN:CRNHNH2 (I) (R = Me, Ph) reacted with, e.g., benzil, benzoin, Ac2,  
(CHO)2, BzCO2Me, and MeO2CC.tplbond.CC02Me to give, in most cases,  
preferentially triazines, some reactions of which were described. E.g., I  
(R = Me) and benzil in EtOH-HCl gave the triazinol II, which showed  
ring-chain tautomerism.  
IT 642-04-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of)  
RN 642-04-6 CAPLUS  
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

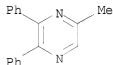


L14 ANSWER 237 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1985:6421 CAPLUS  
DOCUMENT NUMBER: 102:6421  
TITLE: Introduction of the methyl group into the pyrazine ring  
AUTHOR(S): Ohta, Akihiro; Inoue, Akira; Watanabe, Tokuhiko  
CORPORATE SOURCE: Tokyo Coll. Pharm., Hachioji, 192-03, Japan  
SOURCE: Heterocycles (1984), 22(10), 2317-21  
CODEN: HTCYAM; ISSN: 0385-5414  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI



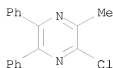
AB Chloropyrazines I (R = alkyl, Ph, H; R1 = H, Ph; R2 = alkyl, Ph) were treated with Me3Al and (Ph3P)4Pd to yield methylpyrazines II. Similarly prepared were III (R3 = alkyl, Ph; R4 = Me, Ph; R5 = alkyl, Cl, Ph). 2,5-Dichloro-3,6-dialkylpyrazines were converted to the resp. III (R4 = Me, R3 and R5 are alkyl), while 2,3-dichloro-5,6-diphenylpyrazine gave III (R3 = R4 = Ph, R5 = Cl).

IT 78605-07-9P 93764-53-5P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 78605-07-9 CAPLUS  
CN Pyrazine, 5-methyl-2,3-diphenyl- (9CI) (CA INDEX NAME)

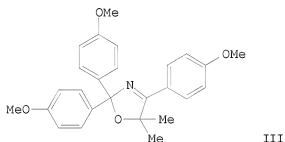
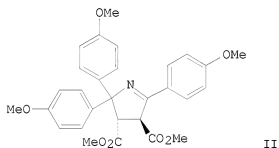


RN 93764-53-5 CAPLUS  
CN Pyrazine, 2-chloro-3-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)





L14 ANSWER 238 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1985:6098 CAPLUS  
 DOCUMENT NUMBER: 102:6098  
 TITLE: Photochemistry of vinyl halides. Heterocycles from reaction of photogenerated vinyl cations with azide anion  
 AUTHOR(S): Kitamura, Tsugio; Kobayashi, Shinjiro; Taniguchi, Hiroshi  
 CORPORATE SOURCE: Fac. Eng., Kyushu Univ., Fukuoka, 812, Japan  
 SOURCE: Journal of Organic Chemistry (1984), 49(25), 4755-60  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 102:6098  
 GI



AB Irradiation of 1,2,2-tris(p-methoxyphenyl)vinyl bromide and Bu<sub>4</sub>N<sup>+</sup> N<sub>3</sub><sup>-</sup> in MeCN afforded 1,1,3,4,6,6-hexakis(p-methoxyphenyl)-2,5-diaza-1,3,5-hexatriene (I). Formation of I suggests the presence of azirine as a reactive intermediate and a route to synthesis of heterocycles in combination with azirine photochem. Irradiation of several α-arylvinyl halides and Bu<sub>4</sub>N<sup>+</sup> N<sub>3</sub><sup>-</sup> in MeCN in the presence of di-Me fumarate gave 1-pyrroline derivs., e.g. II. When the irradiation was performed in acetone, oxazoline derivs., e.g. III, were obtained. The reaction of the vinyl halides with azide anion took place successfully even in a two-phase system, i.e., H<sub>2</sub>O-CH<sub>2</sub>Cl<sub>2</sub>-tetrabutylammonium halide as a phase-transfer catalyst. In

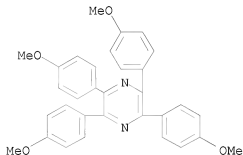
addition, photolysis of 2,2-bis(p-methoxyphenyl)-1-phenylvinyl bromide in a two-phase system gave the  $\beta$ -aryl rearranged pyrrolines. This result indicates strong evidence for the intervention of vinyl cations in the photochem. reaction of the vinyl halide and azide anion. The mechanistic points on the photochem. substitution and the scope and limitation of the reaction are discussed.

IT 21885-49-4P

RL: FORM (Formation, nonpreparative); PREP (Preparation)  
(formation of, by photolysis of tris(methoxyphenyl)vinyl bromide in presence of tetrabutylammonium azide)

RN 21885-49-4 CAPLUS

CN Pyrazine, tetrakis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 239 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1984:406447 CAPLUS

DOCUMENT NUMBER: 101:6447

TITLE: IR studies of pyridyl-substituted pyrazine compounds

AUTHOR(S): Khuhawar, M. Y.

CORPORATE SOURCE: Inst. Chem., Univ. Sind, Jamshoro, Pak.

SOURCE: Pakistan Journal of Scientific and Industrial Research  
(1983), 26(5), 301-7

CODEN: PSIRAA; ISSN: 0030-9885

DOCUMENT TYPE:

LANGUAGE: English

AB The IR of 22 title compds., as CCl<sub>4</sub> solns., nujol mulls, and KBr discs are assigned.

IT 76348-02-2 89684-66-2 89684-67-3

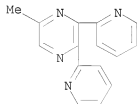
89684-69-5 89702-43-2

RL: PRP (Properties)

(IR of)

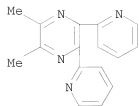
RN 76348-02-2 CAPLUS

CN Pyrazine, 5-methyl-2,3-di-2-pyridinyl- (9CI) (CA INDEX NAME)

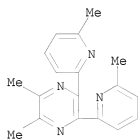


RN 89684-66-2 CAPLUS

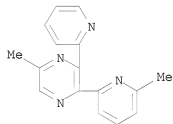
CN Pyrazine, 2,3-dimethyl-5,6-di-2-pyridinyl- (9CI) (CA INDEX NAME)



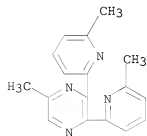
RN 89684-67-3 CAPLUS  
 CN Pyrazine, 2,3-dimethyl-5,6-bis(6-methyl-2-pyridinyl)- (9CI) (CA INDEX NAME)



RN 89684-69-5 CAPLUS  
 CN Pyrazine, 5-methyl-2-(6-methyl-2-pyridinyl)-3-(2-pyridinyl)- (9CI) (CA INDEX NAME)

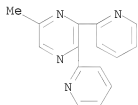


RN 89702-43-2 CAPLUS  
 CN Pyrazine, 5-methyl-2,3-bis(6-methyl-2-pyridinyl)- (9CI) (CA INDEX NAME)

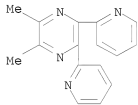


L14 ANSWER 240 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1984:164538 CAPLUS  
 DOCUMENT NUMBER: 100:164538

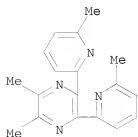
TITLE: Infrared studies of pyridyl-substituted pyrazine compounds  
 AUTHOR(S): Khuhawar, M. Y.  
 CORPORATE SOURCE: Inst. Chem., Univ. Sind, Jamshoro, Pak.  
 SOURCE: Journal of Pure and Applied Sciences (1983), 2(1), 9-17  
 CODEN: JPASEQ; ISSN: 0255-3643  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB IR spectra of 22 pyridyl-substituted pyrazine and dihydropyrazine compds. were studied by using CCl<sub>4</sub> solution, nujol mull and KBr disk techniques. Different regions of strong absorption are recognized and the characteristic absorptions are assigned.  
 IT 76348-02-2 89684-66-2 89684-67-3  
 89684-69-5 89702-43-2  
 RL: PRP (Properties)  
 (IR spectrum of)  
 RN 76348-02-2 CAPLUS  
 CN Pyrazine, 5-methyl-2,3-di-2-pyridinyl- (9CI) (CA INDEX NAME)



RN 89684-66-2 CAPLUS  
 CN Pyrazine, 2,3-dimethyl-5,6-di-2-pyridinyl- (9CI) (CA INDEX NAME)

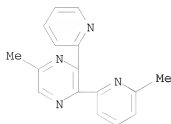


RN 89684-67-3 CAPLUS  
 CN Pyrazine, 2,3-dimethyl-5,6-bis(6-methyl-2-pyridinyl)- (9CI) (CA INDEX NAME)



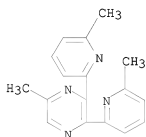
RN 89684-69-5 CAPLUS  
 CN Pyrazine, 5-methyl-2-(6-methyl-2-pyridinyl)-3-(2-pyridinyl)- (9CI) (CA INDEX NAME)

INDEX NAME)



RN 89702-43-2 CAPLUS

CN Pyrazine, 5-methyl-2,3-bis(6-methyl-2-pyridinyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 241 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1983:612457 CAPLUS

DOCUMENT NUMBER: 99:212457

TITLE: Quaternary salts of 2H-imidazoles

AUTHOR(S): Katritzky, Alan R.; Borja, Susana Bravo; Marquet, Jorge; Sammes, Michael P.

CORPORATE SOURCE: Dep. Chem., Univ. Florida, Gainesville, FL, 32611, USA

SOURCE: Journal of the Chemical Society, Perkin Transactions

1: Organic and Bio-Organic Chemistry (1972-1999)

(1983), (9), 2065-9

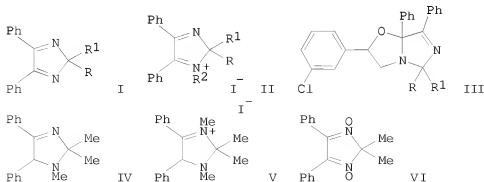
CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 99:212457

GI

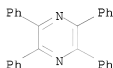


AB Treatment of imidazoles I [R = Me, R1 = Me, Et, (CH<sub>2</sub>)<sub>2</sub>CO<sub>2</sub>Et, Ph; R = R1 = Et] with RI (R = Me, Et) in refluxing MeNO<sub>2</sub> gave the corresponding quaternary salts II (R, R1 as before, R2 = Me, Et) in 10-65% yield. The N-Me protons of II (R2 = Me) were readily exchanged for D in D<sub>2</sub>O. Treatment of II (R = R1 = Me, Et, R2 = Me) with Et<sub>3</sub>N and m-ClC<sub>6</sub>H<sub>4</sub>CHO in CH<sub>2</sub>Cl<sub>2</sub> gave the corresponding imidazooxazoles III in 70% yield. Reduction of II (R = R1 = R2 = Me) with NaBH<sub>4</sub> in MeOH for 2 h gave 85% dihydro-1H-imidazole IV which on acid hydrolysis or treatment with MeI gave 90% PhCOCHPhNHMe and 60% imidazolium iodide V, resp. Oxidation of I (R = R1 = Me) by H<sub>2</sub>O<sub>2</sub> in AcOH at 25° for 2 h gave the dioxide VI in 88% yield.

IT 642-04-6  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, from trimethyldiphenyldihydroimidazole)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 242 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1983:589645 CAPLUS

DOCUMENT NUMBER: 99:189645

TITLE: Studies on herbicidal 2,3-dicyanopyrazines. Part II. Structure-activity relationships of herbicidal 5-ethylamino- and 5-propylamino-2,3-dicyanopyrazines

AUTHOR(S): Nakamura, Akira; Ataka, Toshiei; Segawa, Hirozo; Takeuchi, Yasutomu; Takematsu, Tetsuo

CORPORATE SOURCE: Res. Lab., Kyowa Gas Chem. Ind. Co., Ltd., Niigata, 959-26, Japan

SOURCE: Agricultural and Biological Chemistry (1983), 47(7), 1561-7

CODEN: ABCHA6; ISSN: 0002-1369

DOCUMENT TYPE: Journal

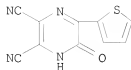
LANGUAGE: English

AB Sixty-eight 6-substituted 5-ethylamino- and 5-propylamino-2,3-dicyanopyrazines were synthesized and their herbicidal activities against barnyard grass (*Echinochloa crus-galli*) were measured in pot tests. The most active compound was 2,3-dicyano-5-propylamino-6-(m-chlorophenyl)pyrazine [72113-45-2]. The activities of the 2 series of compds. were analyzed quant. using the hydrophobic and steric parameters of substituents at the 6-position of the pyrazine ring and an indicator variable.

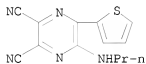
IT 77484-02-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and chlorination of)

RN 77484-02-7 CAPLUS

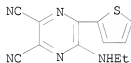
CN 2,3-Pyrazinedicarbonitrile, 1,6-dihydro-6-oxo-5-(2-thienyl)- (9CI) (CA INDEX NAME)



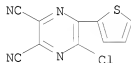
IT 77858-61-8P 87735-72-6P  
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation and herbicidal activity of)  
 RN 77858-61-8 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5-(propylamino)-6-(2-thienyl)- (9CI) (CA INDEX NAME)



RN 87735-72-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5-(ethylamino)-6-(2-thienyl)- (9CI) (CA INDEX NAME)



IT 77858-55-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and reaction with amines)  
 RN 77858-55-0 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5-chloro-6-(2-thienyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 243 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1983:535418 CAPLUS  
 DOCUMENT NUMBER: 99:135418  
 TITLE: Studies on herbicidal 2,3-dicyanopyrazines. Part I. Structure-activity relationship of herbicidal 2,3-dicyano-5-substituted pyrazines  
 AUTHOR(S): Nakamura, Akira; Ataka, Toshiei; Segawa, Hirozo; Takeuchi, Yasutomo; Takematsu, Tetsuo  
 CORPORATE SOURCE: Res. Lab., Kyowa Gas Chem. Ind. Co., Ltd., Niigata, 959-26, Japan  
 SOURCE: Agricultural and Biological Chemistry (1983), 47(7),

1555-60

CODEN: ABCHA6; ISSN: 0002-1369

DOCUMENT TYPE:

Journal

LANGUAGE:

English

AB Sixty-six 2,3-dicyano-5-substituted pyrazines were synthesized and their herbicidal activities against barnyard grass were measured in pot tests to clarify the relationship between chemical structure and activity. The activity of 59 derivs. was related parabolically to the hydrophobic substituent parameter at the 5-position of the pyrazine ring.

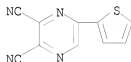
IT 72546-05-5

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)

(herbicidal activity of, structure in relation to)

RN 72546-05-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-(2-thienyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 244 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1983:488170 CAPLUS

DOCUMENT NUMBER: 99:88170

TITLE: A new synthesis of pyrazines

AUTHOR(S): Joshi, S. C.; Mehrotra, K. N.

CORPORATE SOURCE: Dep. Chem., Banaras Hindu Univ., Varanasi, 221 005, India

SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1983), 22B(4), 396-7

CODEN: IJSBDB; ISSN: 0376-4699

DOCUMENT TYPE:

Journal

LANGUAGE:

English

OTHER SOURCE(S):

CASREACT 99:88170

GI

RCHN=CHPh

R

N

Ph

RCHN=CHPh

I

R

N

Ph

II

AB Reaction of dibenzylideneethylenediamines I (R = Ph, 4-MeC6H4) with Na in dry ether followed by bubbling oxygen through reaction mixture affords tetraarylpyrazines II in high yields.

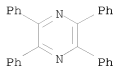
IT 642-04-6P 78817-22-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

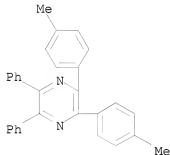
RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

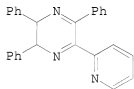




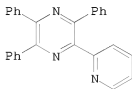
RN 78817-22-8 CAPLUS  
CN Pyrazine, 2,3-bis(4-methylphenyl)-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 245 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1983:143373 CAPLUS  
DOCUMENT NUMBER: 98:143373  
TITLE: Some new pyridyl-substituted pyrazine ligands for copper  
AUTHOR(S): Khuhawar, M. Y.; Bozdar, R. B.; Arain, I.  
CORPORATE SOURCE: Inst. Chem., Univ. Sind, Jamshoro, Pak.  
SOURCE: Journal of the Chemical Society of Pakistan (1982), 4(3), 137-40  
CODEN: JCSPDF; ISSN: 0253-5106  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI

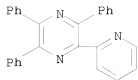


I

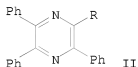
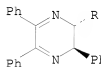


II

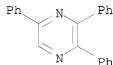
AB meso-H<sub>2</sub>NCHPhCHPhNH<sub>2</sub> was treated with 1,2-dioxo-1-phenyl-2-(2-pyridyl)ethane to give the dihydropyrazine I, which was dehydrogenated to give the pyrazine II. I and II formed colored complexes with Cu(I) which were easily extractable in H<sub>2</sub>O immiscible organic solvents.  
IT 85174-72-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and complex formation with copper(I))  
RN 85174-72-7 CAPLUS  
CN Pyrazine, triphenyl(2-pyridinyl)- (9CI) (CA INDEX NAME)



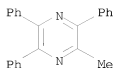
L14 ANSWER 246 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1983:88697 CAPLUS  
 DOCUMENT NUMBER: 98:88697  
 TITLE: PMR spectra of some substituted pyrazines and 2,3-dihydropyrazines  
 AUTHOR(S): Chellappa, J.; Pandiarajan, K.; Rangarajan, T.  
 CORPORATE SOURCE: Dep. Chem., Annamalai Univ., Annamalaiagar, 608 002, India  
 SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1982), 21B(8), 778-9  
 CODEN: IJSBDB; ISSN: 0376-4699  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



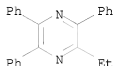
AB NMR of dihydropyrazines I (R = H, Me, Et, Me2CH) and pyrazines II reveal that I are not planar and the dihedral angle about the C-2-C-3 bond in the ring is close to 60°. Effect of alkyl groups on the chemical shift of the benzylic proton of I was discussed. Alkyl groups inhibit the resonance interaction between the Ph group and the pyrazine ring.  
 IT 36476-77-4 66042-94-2 66042-95-3  
 66042-96-4  
 RL: PRP (Properties)  
 (NMR of)  
 RN 36476-77-4 CAPLUS  
 CN Pyrazine, 2,3,5-triphenyl- (CA INDEX NAME)



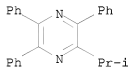
RN 66042-94-2 CAPLUS  
 CN Pyrazine, methyltriphenyl- (9CI) (CA INDEX NAME)



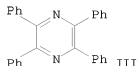
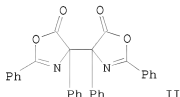
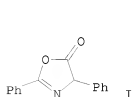
RN 66042-95-3 CAPLUS  
CN Pyrazine, ethyltriphenyl- (9CI) (CA INDEX NAME)



RN 66042-96-4 CAPLUS  
CN Pyrazine, (1-methylethyl)triphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 247 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1983:54420 CAPLUS  
DOCUMENT NUMBER: 98:54420  
TITLE: Reductive cleavage of azlactone and bisazlactone systems  
AUTHOR(S): Bhatti, Amjad Masih; Katyal, Mohan  
CORPORATE SOURCE: Dep. Chem., Indian Inst. Technol., Kanpur, 208 016, India  
SOURCE: Journal of the Institution of Chemists (India) (1982), 54(4), 191-4  
CODEN: JOICA7; ISSN: 0020-3254  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI



AB The reductive cleavage of azlactone I by K in THF gave 48% BzNHCHPhCO<sub>2</sub>H, 11% H<sub>2</sub>NCHPhCO<sub>2</sub>H, and 4% Bz<sub>2</sub>NH, whereas the reductive cleavage of bisazlactone II gave 39% BzNHCHPhCO<sub>2</sub>H, 11% pyrazine III, 3% H<sub>2</sub>NCHPhCO<sub>2</sub>H,

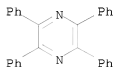
and 2% Bz2NH. The above cleavages were induced by electron transfer from K. Mechanisms are shown.

IT 642-04-6P

RL: FORM (Formation, nonpreparative); PREP (Preparation)  
(formation of, from reductive ring cleavage of benzoylphenylglycine bisazlactone)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 248 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1983:53559 CAPLUS

DOCUMENT NUMBER: 98:53559

TITLE: Transition metal catalyzed addition reactions of 3-phenyl-2H-azirines and alkyl acetylenecarboxylates  
Inada, Akira; Heimgartner, Heinz  
Org. Chem. Inst., Univ. Zurich, Zurich, CH-8057, Switz.

SOURCE: Helvetica Chimica Acta (1982), 65(5), 1489-98

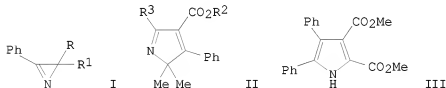
CODEN: HCACAV; ISSN: 0018-019X

DOCUMENT TYPE: Journal

LANGUAGE: German

OTHER SOURCE(S): CASREACT 98:53559

GI



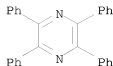
AB Azirine I (R = R1 = Me) reacted with R2O2CC.tplbond.CR3 (R2 = Me, R3 = CO2Me, H; R2 = Et, R3 = CO2Et) in the presence of Mo(CO)6 to give 2H-pyrroles II. Similarly, I (R = Ph, R1 = H) and MeO2CC.tplbond.CCO2Me gave pyrrole III. II (R2 = Me, R3 = CO2Me) was also obtained by treating a mixture of I (R = R1 = Me) and MeO2CC.tplbond.CCO2Me with WC16-Bu4Sn. A tentative mechanism for the formation of II was given.

IT 642-04-6P

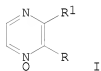
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 642-04-6 CAPLUS

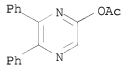
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 249 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1982:582360 CAPLUS  
 DOCUMENT NUMBER: 97:182360  
 TITLE: Syntheses and reactions of some 2,3-disubstituted pyrazine monoxides  
 AUTHOR(S): Ohta, Akihiro; Masano, Sawako; Iwakura, Sachiko; Tamura, Akiko; Watahiki, Hiroko; Teutsui, Mayumi; Akita, Yasuo; Watanabe, Tokuhiko; Kurihara, Teruo  
 CORPORATE SOURCE: Tokyo Coll. Pharm., Tokyo, 192-03, Japan  
 SOURCE: Journal of Heterocyclic Chemistry (1982), 19(3), 465-73  
 CODEN: JHTCAD; ISSN: 0022-152X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 97:182360  
 GI

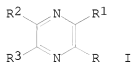


AB The reactions of pyrazine I (R, R1 = Me, Ph) with POC13 or Ac2O gave monochloro- and monoacetoxypyrazines in almost all cases. However, the reaction of I (R = R1 = Ph) with Ac2O gave a diacetoxypyrazine. These products were converted further to hydroxy or dichloro derivs.  
 IT 83520-60-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and hydrolysis of)  
 RN 83520-60-9 CAPLUS  
 CN Pyrazinol, 5,6-diphenyl-, acetate (ester) (9CI) (CA INDEX NAME)

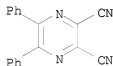


L14 ANSWER 250 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1982:142801 CAPLUS  
 DOCUMENT NUMBER: 96:142801  
 TITLE: Introduction of a cyano group in pyrazine  
 AUTHOR(S): Akita, Yasuo; Shimazaki, Makoto; Ohta, Akihiro

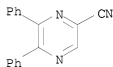
CORPORATE SOURCE: Tokyo Coll. Pharm., Tokyo, 192-03, Japan  
 SOURCE: Synthesis (1981), (12), 974-5  
 CODEN: SYNTBF; ISSN: 0039-7881  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 GI



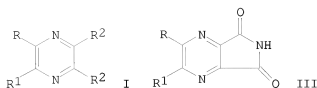
AB Refluxing a mixture of I (R = Cl, R1 = R3 = Me2CHCH2, R2 = H) with KCN in DMF containing Pd(PPh3)4 for 2.5 h followed by treatment with H2O gave I (R = cyano, R1 = R3 = Me2CHCH2, R2 = H) in 77% yield. Similarly prepared were 10 addnl. cyanopyrazines (I, R = cyano; R1, R3 = H, Ph, Me, Me2CH, cyano; R2 = Ph, H, cyano) in 16-98% yields.  
 IT 52197-23-6P 81225-12-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 81225-12-9 CAPLUS  
 CN Pyrazinecarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 251 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1982:68939 CAPLUS  
 DOCUMENT NUMBER: 96:68939  
 TITLE: Synthesis of pyrazinedicarbonylides from diaminomaleonitrile  
 AUTHOR(S): Tsuda, Tadataka; Fujishima, Katsuhiko; Ueda, Hiroo  
 CORPORATE SOURCE: Coll. Agric., Univ. Osaka Prefect., Osaka, 591, Japan  
 SOURCE: Agricultural and Biological Chemistry (1981), 45(9), 2129-30  
 CODEN: ABCHA6; ISSN: 0002-1369  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 96:68939  
 GI

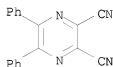


AB Hydrolysis of pyrazines I (R = H, Me, Ph, 4-ClC<sub>6</sub>H<sub>4</sub>, 3,4-Cl<sub>2</sub>C<sub>6</sub>H<sub>3</sub>, 4-MeOC<sub>6</sub>H<sub>4</sub>; R<sub>1</sub> = H, Me, Ph; R<sub>2</sub> = CN), prepared from diaminomaleonitrile, followed by esterification gave I (R<sub>2</sub> = CO<sub>2</sub>Me)(II). Amidn. of II with NH<sub>3</sub> followed by intramol. cyclocondensation gave the title compds. (III). II (R = Ph, R<sub>1</sub> = H, R<sub>2</sub> = CO<sub>2</sub>Me) showed bactericidal activity superior to that of phenazine oxide.

IT 52197-23-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrolysis of)

RN 52197-23-6 CAPLUS

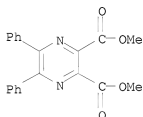
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



IT 80356-81-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and amidation of)

RN 80356-81-6 CAPLUS

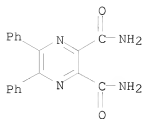
CN 2,3-Pyrazinedicarboxylic acid, 5,6-diphenyl-, dimethyl ester (9CI) (CA INDEX NAME)



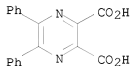
IT 80356-91-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and cyclization of, pyridinedicarboximide from)

RN 80356-91-8 CAPLUS

CN 2,3-Pyrazinedicarboxamide, 5,6-diphenyl- (9CI) (CA INDEX NAME)

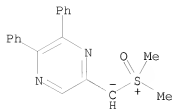


IT 53954-53-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and esterification of)  
 RN 53954-53-3 CAPLUS  
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-diphenyl- (9CI) (CA INDEX NAME)

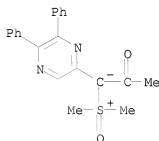


L14 ANSWER 252 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1982:68932 CAPLUS  
 DOCUMENT NUMBER: 96:68932  
 TITLE: Studies on pyrimidine derivatives. XXIII. Synthesis  
 of acylmethylpyrimidines and related compounds via  
 imido-yl-substituted oxosulfonium ylides  
 AUTHOR(S): Yamanaka, Hiroshi; Konno, Shoetsu; Sakamoto, Takao;  
 Niitsuma, Setsuko; Noji, Sayo  
 CORPORATE SOURCE: Pharm. Inst., Tohoku Univ., Aobayama, 980, Japan  
 SOURCE: Chemical & Pharmaceutical Bulletin (1981), 29(10),  
 2837-43  
 CODEN: CPBTAL; ISSN: 0009-2363  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 96:68932  
 AB The reaction of 2- and 4-chloropyrimidines with Me2S+(O)C-H2 afforded the  
 corresponding pyrimidinylmethylides. Pyrimidine derivs. containing a  
 functionalized side chain such as CH2COMe, CH2COPh, CO2Et, CONHPh were  
 synthesized by acylation of the pyrimidinylmethylides followed by  
 desulfurization of the resulting pyrimidinylacylmethylides.  
 IT 80602-11-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and acylation of)  
 RN 80602-11-5 CAPLUS  
 CN Sulfoxonium, dimethyl-, (5,6-diphenylpyrazinyl)methylide (9CI) (CA INDEX  
 NAME)

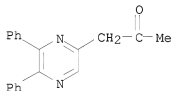




IT 80602-12-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and desulfurization of)  
 RN 80602-12-6 CAPLUS  
 CN Sulfoxonium, dimethyl-, 1-(5,6-diphenylpyrazinyl)-2-oxopropylidene (9CI)  
 (CA INDEX NAME)

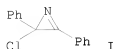


IT 80602-13-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 80602-13-7 CAPLUS  
 CN 2-Propanone, 1-(5,6-diphenylpyrazinyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 253 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1981:550284 CAPLUS  
 DOCUMENT NUMBER: 95:150284  
 TITLE: Chloroazirines: conversion to azacyclopropenium  
 cations, azidoazirines, and diazirines  
 AUTHOR(S): Gallagher, T. C.; Storr, R. C.  
 CORPORATE SOURCE: Robert Robinson Lab., Univ. Liverpool, Liverpool, L69  
 3BX, UK  
 SOURCE: Tetrahedron Letters (1981), 22(30), 2905-8  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 95:150284

GI



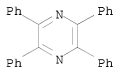
AB The reactions of the azirine I were studied with a view to preparing the azacyclopropenyl cation. Although evidence points to the formation of this species, it was not observed due to its rapid reaction with substrates. E.g., on treatment with  $\text{AgBF}_4$  (MeCN) I gave  $\text{AgCl}$  and the cation-derived product benzil, and, in addition triphenyloxazole and  $\text{PhCN}$  from attack of chloroazirine on the cation. Attempted conversion of I to the biazirine by treatment with excess  $\text{Zi}$  (THF, room temperature, 30 min) gave instead tetraphenylpyrazine and -pyrimidine (10 and 10%, resp.). Reaction of chloroazirines with azide ion gave alkynes and nitriles, via the labile azidoazirines.

IT 642-04-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, by dimerization of diphenyl- and chlorodiphenylazirines)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 254 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1981:497684 CAPLUS

DOCUMENT NUMBER: 95:97684

TITLE: Reactions of phenanthrenequinone and benzil with primary amines: synthesis of 1H/2H-phenanthro[9,10-d]imidazole, phenanthro[9,10-d]oxazole and pyrazine  
Giri, B. P.

AUTHOR(S):  
CORPORATE SOURCE: Dep. Chem., Banaras Hindu Univ., Varanasi, 221 005, India

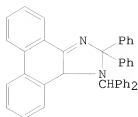
SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1981), 20B(4), 279-81

CODEN: IJSBDB; ISSN: 0376-4699

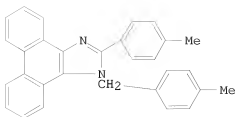
DOCUMENT TYPE: Journal

LANGUAGE: English

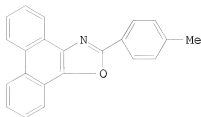
GI



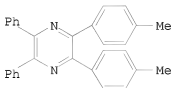
II



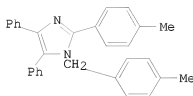
III



IV



V



VI

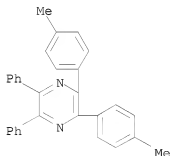
AB 9,10-Phenanthrenequinone (I) was treated with Ph<sub>2</sub>CHNH<sub>2</sub> to give the phenanthroimidazole II. I was cyclized with p-MeC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NH<sub>2</sub> to give the phenanthroimidazole III and the phenanthrooxazole IV. PhCOCOPh reacted with (p-MeC<sub>6</sub>H<sub>4</sub>)<sub>2</sub>CHNH<sub>2</sub> to give (p-MeC<sub>6</sub>H<sub>4</sub>)<sub>2</sub>CHN:CPhCPh: NCH(C<sub>6</sub>H<sub>4</sub>Me-p)<sub>2</sub> and pyrazine V. PhCOCOPh was treated with p-MeC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NH<sub>2</sub> to give the imidazole VI.

IT 78817-22-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 78817-22-8 CAPLUS

CN Pyrazine, 2,3-bis(4-methylphenyl)-5,6-diphenyl- (9CI) (CA INDEX NAME)



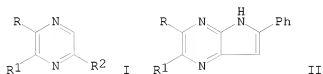
L14 ANSWER 255 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1981:480889 CAPLUS

DOCUMENT NUMBER: 95:80889

TITLE: Cyclization by intramolecular amination in the pyrazine series

AUTHOR(S): Vierfond, Jean Michel; Mettey, Yvette;  
 Mascrier-Demagney, Line; Miocque, Marcel  
 CORPORATE SOURCE: Fac. Pharm., Poitiers, 86034, Fr.  
 SOURCE: Tetrahedron Letters (1981), 22(13), 1219-22  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French  
 OTHER SOURCE(S): CASREACT 95:80889  
 GI

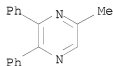


AB Metalation of the pyrazines I (R = R1 = H, Ph, R2 = Me; R ≠ R1 = H, Me, R2 = Me) followed by addition of PhCN gave the corresponding diazaindoles II, in addition to varying amts. of I [R2 = CH:C(NH2)Ph, CH:C(OH)Ph]. E.g., I (R = R1 = H, R2 = Me) was treated with NaNH2 in NH3(l) for 1 h followed by PhCN in Et2O for 2 h to give, on hydrolysis, 30% II (R = R1 = H) and 37% I [R = R1 = H, R2 = CH:C(OH)Ph]. It is proposed that the reaction occurs via an imine-enamine which undergoes intramol. cyclization.

IT 78605-07-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (cyclocondensation reaction of, with benzonitrile)

RN 78605-07-9 CAPLUS

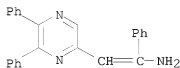
CN Pyrazine, 5-methyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



IT 78605-17-1P 78616-88-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, by reaction of pyrazine with benzonitrile)

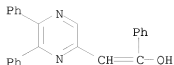
RN 78605-17-1 CAPLUS

CN Benzenemethanamine, α-[(5,6-diphenylpyrazinyl)methylene]- (9CI) (CA INDEX NAME)



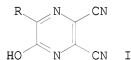
RN 78616-88-3 CAPLUS

CN Benzenemethanol, α-[(5,6-diphenylpyrazinyl)methylene]- (9CI) (CA INDEX NAME)

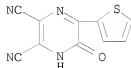


L14 ANSWER 256 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1981:407336 CAPLUS  
 DOCUMENT NUMBER: 95:7336  
 TITLE: 6-Aryl-2,3-dicyano-5-hydroxypyrazines  
 PATENT ASSIGNEE(S): Kyowa Gas Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 55167276	A	19801226	JP 1979-74311	19790613
JP 61057303	B	19861206		
PRIORITY APPLN. INFO.: GI			JP 1979-74311	A 19790613



AB Twelve pyrazines I (R = Ph, p-tolyl, 3-fluorophenyl, 2-furyl, 2-thienyl, etc.) were prepared by hydrolysis of RCOCN with H<sub>2</sub>SO<sub>4</sub>-HCl and subsequent cyclization with diaminomaleonitrile. Thus, 0.01 mol concentrated HCl was added to 0.2 mol H<sub>2</sub>SO<sub>4</sub> in 3.6 g H<sub>2</sub>O and the acid stirred with 0.1 mol PhCOCN at 45° for 2 h and at 50° for 30 min. The mixture was stirred with 0.1 mol diaminomaleonitrile in aqueous THF at 60° for 1.5 h to give 80.1% I (R = Ph).  
 IT 77484-02-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation of)  
 (preparation of)  
 RN 77484-02-7 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 1,6-dihydro-6-oxo-5-(2-thienyl)- (9CI) (CA INDEX NAME)

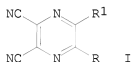


L14 ANSWER 257 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1981:407335 CAPLUS

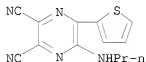
DOCUMENT NUMBER: 95:7335  
 TITLE: Aminopyrazine derivatives  
 PATENT ASSIGNEE(S): Kyowa Gas Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56002973	A	19810113	JP 1979-77865	19790620
JP 62027069	B	19870612		

PRIORITY APPLN. INFO.:  
 GI JP 1979-77865 A 19790620

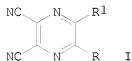


AB Twenty-nine title derivs. I [R = NR2R3, R1 = (un)substituted Ph, furyl, thienyl; R2, R3 = H, (un)substituted alkyl, alkenyl, alkynyl, cycloalkyl, (un)substituted Ph, PhCH2; R2R3N may form a ring], useful as herbicides (no data) were prepared. Thus, 1.9 g SOCl2 and 0.04 g DMF were added to 2.05 g I (R = OH, R1 = 3-ClC6H4) in xylene, the mixture was stirred 30 min at 110°, stripped of SOCl2, a mixture of 0.47 g PrNH2 and 3.2 g 10% aqueous NaOH added at room temperature, and the whole stirred 1 h at room temperature to give  
 2.12 g I (R = PrNH, R1 = 3-ClC6H4).  
 IT 77858-61-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 77858-61-8 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5-(propylamino)-6-(2-thienyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 258 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1981:407333 CAPLUS  
 DOCUMENT NUMBER: 95:7333  
 TITLE: 2,3-Dicyano-5-chloropyrazine derivatives by chlorination  
 PATENT ASSIGNEE(S): Kyowa Gas Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 56002970	A	19810113	JP 1979-77866	19790620
PRIORITY APPLN. INFO.: GI			JP 1979-77866	A 19790620

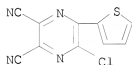


AB Twenty title derivs. I [R = Cl, R1 = H, (un)substituted Ph, PhCH2, thienyl, furyl] were prepared. Thus, 5.36 g SOCl2 and 0.04 g DMF were added to 2 g I (R = OH, R1 = Ph) in xylene and the mixture was stirred 30 min at 110° to give 88% I (R = Cl, R1 = Ph).

IT 77858-55-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

RN 77858-55-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-chloro-6-(2-thienyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 259 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1981:407332 CAPLUS

DOCUMENT NUMBER: 95:7332

TITLE: 2,3-Dicyanopyrazine derivatives with herbicidal activity

PATENT ASSIGNEE(S): Kyowa Gas Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF

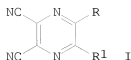
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 56002971	A	19810113	JP 1979-77867	19790620
JP 62025143	B	19870601		
PRIORITY APPLN. INFO.: GI			JP 1979-77867	A 19790620

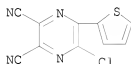


AB Twenty-three title derivs. I [R = thienyl, furyl, R2R3C6H3 (R2 = H, halo, alkoxy; R3 = halo, NO2, CF3, H2NCO, cyano, alkoxy); R1 = Cl, OH, alkylamino] were prepared. Herbicidal data of I were given against *Echinochloa crus-galli*, broad-leaved weeds, *Scirpus juncoides*, and *Eleocharis acicularis*. Thus, stirring a mixture of 7.56 g (Z)-H2N(NC)C:C(CN)NH2, 15.4 g 3,4-Cl2C6H3COCO2H, and 36 mL 4N HCl in MeOH 2 h at 40° gave 16.7 g I (R = 3,4-Cl2C6H3, R1 = OH).

IT 77858-55-0P 77858-61-8P  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
 (preparation and herbicidal activity of)

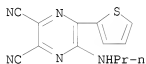
RN 77858-55-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-chloro-6-(2-thienyl)- (9CI) (CA INDEX NAME)



RN 77858-61-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-(propylamino)-6-(2-thienyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 260 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1981:192371 CAPLUS

DOCUMENT NUMBER: 94:192371

TITLE: 2,3-Dicyano-5-hydroxypyrazine derivatives

PATENT ASSIGNEE(S): Kyowa Gas Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

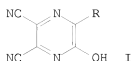
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 55115874	A	19800906	JP 1979-23242	19790228
PRIORITY APPLN. INFO.:			JP 1979-23242	A 19790228

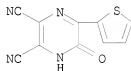
GI





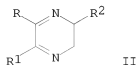
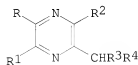
AB Fourteen title derivs. I [R = (un)substituted Ph, furyl, thienyl] were prepared by reaction of diaminomaleonitrile (II) with RCOCONH<sub>2</sub> (III) in the presence of acids. Thus, a mixture of 1.08 g II, 1.49 g III (R = Ph), and 20 mL 2N HCl in EtOH was stirred 1 h at 20-35° and 1 h at 40° to give 1.78 g I (R = Ph).

IT 77484-02-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 77484-02-7 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 1,6-dihydro-6-oxo-5-(2-thienyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 261 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1981:175164 CAPLUS  
 DOCUMENT NUMBER: 94:175164  
 TITLE: Pyrazine derivatives  
 PATENT ASSIGNEE(S): Ogawa and Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 55120570	A	19800917	JP 1979-30314	19790312
JP 61048505	B	19861024		
PRIORITY APPLN. INFO.:			JP 1979-30314	A 19790312
GI				



AB Fourteen pyrazine derivs. (I, R, R<sub>1</sub> = alkyl, alkenyl; R<sub>2</sub> = H, alkyl, alkenyl; R<sub>3</sub>, R<sub>4</sub> = H, alkyl, alkenyl, aryl; R<sub>3</sub>R<sub>4</sub>C may be heterocyclic) were prepared by reaction of II with aldehydes or ketones in the presence of bases. Thus, 500 mg Na in MeOH was added to 471.8 mg II (R = R<sub>1</sub> = Me, R<sub>2</sub>

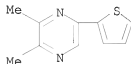
= H) in MeOH with ice cooling under N, 0.3 g EtCHO added, and the whole stirred 24 h at room temperature to give 476 mg I (R = R1 = Me, R2 = R3 = H, R4 = Et).

IT 77390-03-5P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 77390-03-5 CAPLUS

CN Pyrazine, 2,3-dimethyl-5-(2-thienyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 262 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1981:55133 CAPLUS

DOCUMENT NUMBER: 94:55133

TITLE: The absorption characteristic of ruthenium dipyrindyl  
and ortho-phenanthroline derivatives

AUTHOR(S): Khuhawar, M. Y.

CORPORATE SOURCE: Dep. Chem., Univ. Birmingham, Birmingham, B 15 2TT, UK  
SOURCE: Journal of the Chemical Society of Pakistan (1980),  
2(3), 87-90

CODEN: JCSPDF; ISSN: 0253-5106

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Ten pyridyl-substituted pyrazine ligands containing ferriin atomic groups were examined as complexing reagents for ruthenium and their molar absorptivities at their resp.  $\lambda_{max}$  are reported. The effect of Me substitution on the absorption maximum and molar absorptivities were established.

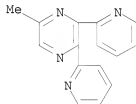
IT 76348-02-2D, ruthenium complexes 76348-03-3D, ruthenium complexes

RL: PRP (Properties)

(electronic absorption spectra of)

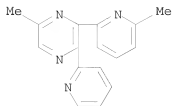
RN 76348-02-2 CAPLUS

CN Pyrazine, 5-methyl-2,3-di-2-pyridinyl- (9CI) (CA INDEX NAME)

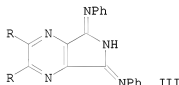
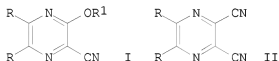


RN 76348-03-3 CAPLUS

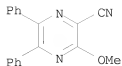
CN Pyrazine, 5-methyl-3-(6-methyl-2-pyridinyl)-2-(2-pyridinyl)- (9CI) (CA INDEX NAME)



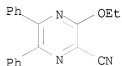
L14 ANSWER 263 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1980:586294 CAPLUS  
 DOCUMENT NUMBER: 93:186294  
 TITLE: One-step preparation of 3-alkoxy-pyrazine-2-carbonitriles from pyrazine-2,3-dicarbonitriles and related reactions  
 AUTHOR(S): Kojima, Takakazu; Nagasaki, Fumihiko; Ohtsuka, Yozo  
 CORPORATE SOURCE: Fine Chem. Res. Lab., Nippon Soda Co. Ltd., Odawara, 250-02, Japan  
 SOURCE: Journal of Heterocyclic Chemistry (1980), 17(3), 455-9  
 CODEN: JHTCAD; ISSN: 0022-152X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 93:186294  
 GI



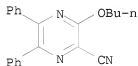
AB Disubstituted alkoxy-pyrazinecarbonitriles I (R = Ph, H, 1,8-C10H6, 9,10-phenanthrenediyl; R1 = alkyl) were prepared from the pyrazinedicarbonitriles II by direct substitution with alcs. Treatment of II with amines gave either pyrrolopyrazines III (R = H, Ph) or substitution products. In a low temperature range, II afforded imidates and related compds. The preference among these reactions depended on the 5,6-substituents and on the reaction conditions.  
 IT 75018-08-5P 75018-09-6P 75018-10-9P  
 75018-11-0P 75018-15-4P 75018-16-5P  
 75018-18-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 75018-08-5 CAPLUS  
 CN Pyrazinecarbonitrile, 3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



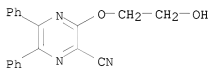
RN 75018-09-6 CAPLUS  
 CN Pyrazinecarbonitrile, 3-ethoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



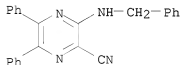
RN 75018-10-9 CAPLUS  
 CN Pyrazinecarbonitrile, 3-butoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



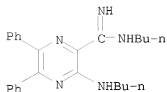
RN 75018-11-0 CAPLUS  
 CN Pyrazinecarbonitrile, 3-(2-hydroxyethoxy)-5,6-diphenyl- (9CI) (CA INDEX NAME)



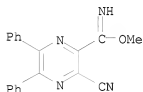
RN 75018-15-4 CAPLUS  
 CN Pyrazinecarbonitrile, 5,6-diphenyl-3-[(phenylmethyl)amino]- (9CI) (CA INDEX NAME)



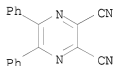
RN 75018-16-5 CAPLUS  
 CN Pyrazinecarboximidamide, N-butyl-3-(butylamino)-5,6-diphenyl- (9CI) (CA INDEX NAME)



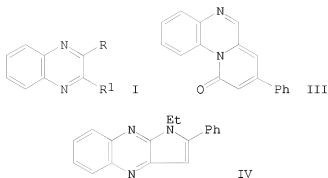
RN 75018-18-7 CAPLUS  
 CN Pyrazinecarboximidic acid, 3-cyano-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



IT 52197-23-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (substitution reaction of, with alcs.)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 264 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1980:568226 CAPLUS  
 DOCUMENT NUMBER: 93:168226  
 TITLE: Alkynyl- and dialkynylquinoxalines. Synthesis of condensed quinoxalines  
 AUTHOR(S): Ames, Donald E.; Brohi, M. Ismail  
 CORPORATE SOURCE: Chem. Dep., Chelsea Coll., London, SW3 6LX, UK  
 SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1980), (7), 1384-9  
 CODEN: JCPRB4; ISSN: 0300-922X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 93:168226  
 GI



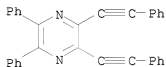
AB Condensation of 2-chloro- and 2,3-dichloroquinoxalines I (R = Cl, R1 = H, Cl) with alk-1-yne in the presence of (Ph3P)2PdCl2 and CuI gave mono- and dialkynylquinoxalines II (R = alkynyl, R1 = H, alkynyl) (II). Addition of amines to II gave stable enamines, and hydration of II gave 2'-oxoalkyl compds. existing predominantly in the enol form due to intramol. H bonding, e.g. I [R = CH:C(OH)Ph, R1 = H]. Condensation of II with CH2(CO2Et)2 and related compds. gave pyrido[1,2-a]quinoxalin-4-ones. (e.g. III). Pyrrolo[2,3-b]quinoxalines (e.g. IV) were prepared from I (R = alkynyl, R1 = Cl).

IT 75163-70-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 75163-70-1 CAPLUS

CN Pyrazine, 2,3-diphenyl-5,6-bis(2-phenylethynyl)- (9CI) (CA INDEX NAME)

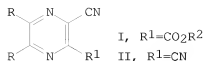


L14 ANSWER 265 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1980:471806 CAPLUS  
DOCUMENT NUMBER: 93:71806  
TITLE: Cyanopyrazinecarboxylic acid esters  
INVENTOR(S): Tomita, Nobuo; Genda, Yoshikazu; Ito, Masaru  
PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 55002638	A	19800110	JP 1978-74890	19780622
JP 62018553	B	19870423		
PRIORITY APPLN. INFO.:			JP 1978-74890	A 19780622

GI



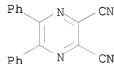
II, R<sup>1</sup>=CN

AB Title esters I (R, R<sub>2</sub> = H, Me; H, Et; Me, Me; Me, Et; Ph, Me) were prepared by reaction of II with R<sub>2</sub>OH in the presence of alkali followed by treatment with aqueous mineral acids. Thus, 5 mL N aqueous NaOH was added to a mixture of 2.6 g II (R = H) and 400 mL MeOH at 0°, the whole kept 1 h at -3° to -5°, made pH 3 with 3 mL 19% HCl, and the whole stirred 3 h at room temperature to give 2.5 g I (R = H, R<sub>2</sub> = Me).

IT 52197-23-6  
 RL: RCT (Reactant); RACT (Reactant or reagent) (hydrolysis and esterification of)

RN 52197-23-6 CAPLUS

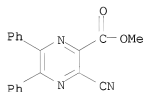
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



IT 74402-61-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)

RN 74402-61-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-cyano-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



L14 ANSWER 266 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1980:446712 CAPLUS

DOCUMENT NUMBER: 93:46712

TITLE: Pyrazinecyanocarboxamides

INVENTOR(S): Genda, Yoshikazu; Tomita, Nobuo; Ito, Masaru; Kano, Saburo

PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF

DOCUMENT TYPE: Patent

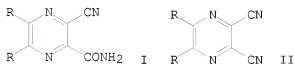
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

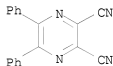
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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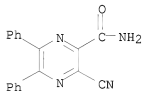
JP 54154776 A 19791206 JP 1978-63655 19780527  
 JP 61056230 B 19861201  
 PRIORITY APPLN. INFO.: JP 1978-63655 A 19780527  
 GI



AB Title compds. I (R = H, Me, Ph) were prepared by treating II with HCl and AcOH. Thus, stirring a mixture of 5 g II, 40 mL 35% HCl, and 5 mL AcOH for 3 h 15 min at 30-5° gave 86.1% I (R = H).  
 IT 52197-23-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrolysis of)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)

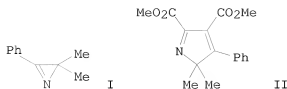


IT 66371-68-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 66371-68-4 CAPLUS  
 CN Pyrazinecarboxamide, 3-cyano-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 267 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1980:163797 CAPLUS  
 DOCUMENT NUMBER: 92:163797  
 TITLE: Molybdenum hexacarbonyl-induced reactions of  
 3-aryl-2H-azirines and acetylenes  
 AUTHOR(S): Inada, Akira; Heimgartner, Heinz; Schmid, Hans  
 CORPORATE SOURCE: Org. Chem. Inst., Univ. Zurich-Irchel, Zurich,  
 CH-8057, Switz.  
 SOURCE: Tetrahedron Letters (1979), (32), 2983-6  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 92:163797  
 GI



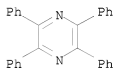


AB The Mo(CO)<sub>6</sub>-induced reaction of 3-aryl-2H-azirines and acetylenecarboxylates gave pyrrole derivs. by splitting of the C-N double bond of the azirine. E.g., the azirine I and MeO<sub>2</sub>CC.tplbond.CCO<sub>2</sub>Me in the presence of Mo(CO)<sub>6</sub> gave 28% pyrroles II. Without the acetylenic compound, known pyrazine derivs. were formed.

IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 268 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1980:146702 CAPLUS

DOCUMENT NUMBER: 92:146702

TITLE: Reaction between benzil and primary amines leading to the syntheses of heterocyclic systems

AUTHOR(S): Mehrotra, K. N.; Giri, B. P.

CORPORATE SOURCE: Dep. Chem., Banaras Hindu Univ., Banaras, 221005, India

SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1979), 18B(4), 374-5  
 CODEN: IJSBDB; ISSN: 0376-4699

DOCUMENT TYPE: Journal

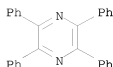
LANGUAGE: English

AB Reaction of benzil with Ph<sub>2</sub>CHNH<sub>2</sub> in the presence of ZnCl<sub>2</sub> gave Ph<sub>2</sub>CHN:CPhCPh:NCHPh<sub>2</sub>, 2,3,5,6-tetraphenylpyrazine, 1-benzylhydryl-2,2,4,5-tetraphenyl-3-imidazoline, and 2,2,4,5-tetraphenylimidazole. Reaction of benzil with PhCH<sub>2</sub>NH<sub>2</sub> similarly gave 1-benzyl-2,4,5-triphenylimidazole. When benzil was treated with Ph<sub>2</sub>CHNH<sub>2</sub> in the absence of ZnCl<sub>2</sub> PhCOCPh:NCHPh<sub>2</sub> was obtained.

IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

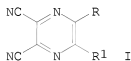
RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

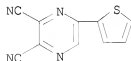


L14 ANSWER 269 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1980:58823 CAPLUS  
 DOCUMENT NUMBER: 92:58823  
 TITLE: Aminodicyanopyrazine derivatives  
 INVENTOR(S): Nakamura, Akira; Chatani, Michio; Ataka, Toshihide;  
 Segawa, Hirozo; Miura, Takamaro; Takematsu, Tetsuo  
 PATENT ASSIGNEE(S): Kyowa Gas Chemical Industry Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 22 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 54106479	A	19790821	JP 1978-11964	19780207
JP 61021231	B	19860526		
PRIORITY APPLN. INFO.: GI			JP 1978-11964	A 19780207

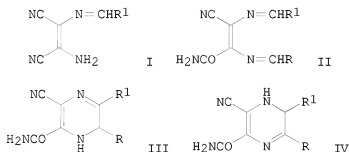


AB Dicyanopyrazine derivs. (I; R = H, alkyl, aryl, aralkyl; R1 = amino, heterocycle), effective herbicides at 500 g/10 are, were prepared by amination of the halo derivs. (I; R1 = halo) with amine derivs. Thus, a solution of 0.010 mol PhNH2 in Me2CO was added to a solution of 0.005 mol I (R = H, R1 = Cl) in Me2CO at 0-5° with stirring and the mixture stirred 30 min at 10° to give 80% I (R = H, R1 = PhNH). Similarly prepared were 94 addnl. I.  
 IT 72546-05-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 72546-05-5 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5-(2-thienyl)- (9CI) (CA INDEX NAME)



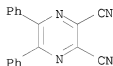
L14 ANSWER 270 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1980:41887 CAPLUS

DOCUMENT NUMBER: 92:41887  
 TITLE: Chemistry of diaminomaleonitrile. 5. Dihydropyrazine synthesis  
 AUTHOR(S): Ohtsuka, Yozo; Tohma, Eiko; Kojima, Sigeru; Tomita, Nobuo  
 CORPORATE SOURCE: Sagami Chem. Res. Cent., Sagamihara, 229, Japan  
 SOURCE: Journal of Organic Chemistry (1979), 44(26), 4871-6  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 92:41887  
 GI

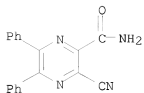


AB Condensation of RCHO (R = optionally substituted Ph) with Schiff bases I (R1 = optionally substituted Ph, CHMe2) in the presence of NEt3 <20° is accompanied by regiospecific hydration of the nitrile groups to give 3-cyanoacrylamide derivs. II, which cyclize readily into 1,2-dihydropyrazines III and IV. The substituent effect on the product ratio is examined, and the reaction mechanism is discussed in terms of a new general reaction pattern of diaminomaleonitrile derivative. Reactions of III and IV by oxidation, reduction, hydantoin formation with isocyanates, and cyanoethylation are also reported.

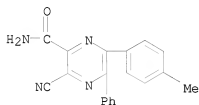
IT 52197-23-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrolysis of)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



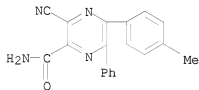
IT 66371-68-4P 71871-19-7P 71871-20-0P  
 71871-22-2P 71871-23-3P 71871-24-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 66371-68-4 CAPLUS  
 CN Pyrazinecarboxamide, 3-cyano-5,6-diphenyl- (9CI) (CA INDEX NAME)



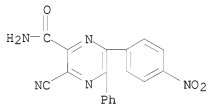
RN 71871-19-7 CAPLUS  
 CN Pyrazinecarboxamide, 3-cyano-6-(4-methylphenyl)-5-phenyl- (9CI) (CA INDEX NAME)



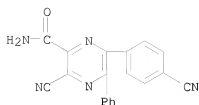
RN 71871-20-0 CAPLUS  
 CN Pyrazinecarboxamide, 3-cyano-5-(4-methylphenyl)-6-phenyl- (9CI) (CA INDEX NAME)



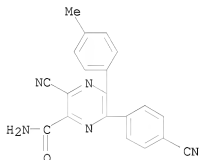
RN 71871-22-2 CAPLUS  
 CN Pyrazinecarboxamide, 3-cyano-6-(4-nitrophenyl)-5-phenyl- (9CI) (CA INDEX NAME)



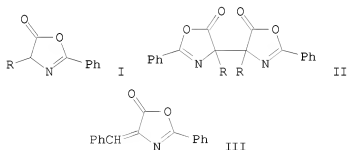
RN 71871-23-3 CAPLUS  
 CN Pyrazinecarboxamide, 3-cyano-6-(4-cyanophenyl)-5-phenyl- (9CI) (CA INDEX NAME)



RN 71871-24-4 CAPLUS  
 CN Pyrazinecarboxamide, 3-cyano-6-(4-cyanophenyl)-5-(4-methylphenyl)- (9CI)  
 (CA INDEX NAME)



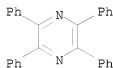
L14 ANSWER 271 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1980:5799 CAPLUS  
 DOCUMENT NUMBER: 92:5799  
 TITLE: Sensitized photooxygenations of  $\Delta^2$ -oxazolin-5-ones and related studies  
 AUTHOR(S): Dixit, Vyas M.; Bhat, Venkataramana; Trozzolo, Anthony M.; George, M. V.  
 CORPORATE SOURCE: Dep. Chem., Indian Inst. Technol., Kanpur, 208016, India  
 SOURCE: Journal of Organic Chemistry (1979), 44(23), 4169-73  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 92:5799  
 GI



AB The Rose Bengal sensitized photooxygenation of I (R = Ph) in benzene-MeOH for 0.25 h gave 44% II (R = Ph) and 28% BzNH<sub>2</sub>; in MeOH for 0.5 h 40% Bz2NH

and 49% BzNH<sub>2</sub> were formed; and in either benzene or cyclohexane only BzNH<sub>2</sub> was formed. Ni peroxide oxidation of I (R = Ph) gave 38% II (R = Ph). Direct irradiation of II (R = Ph) in benzene or acetone gave BzNH<sub>2</sub>, whereas thermolysis in o-Cl<sub>2</sub>C<sub>6</sub>H<sub>4</sub> gave 3% tetraphenylpyrazine. Sensitized photooxygenation of I (R = PhCH<sub>2</sub>) gave 42% PhCH<sub>2</sub>CONHBz; direct irradiation gave only BzNH<sub>2</sub>. Ni peroxide oxidation of I (R = PhCH<sub>2</sub>) gave 40% II (R = PhCH<sub>2</sub>); direct irradiation of II (R = PhCH<sub>2</sub>) gave only BzNH<sub>2</sub>. Sensitized photooxygenation of III in MeOH gave 53% PhCH:C(CO<sub>2</sub>R)NHBz (IV, R = Me) and 29% BzNH<sub>2</sub>; direct irradiation of III gave 31% IV (R = H) and 52% BzNH<sub>2</sub>. The reaction mechanisms were discussed.

IT 642-04-6P  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, in thermolysis of bisoxazolinone derivative)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

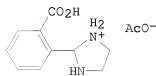


L14 ANSWER 272 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1979:507952 CAPLUS  
 DOCUMENT NUMBER: 91:107952  
 TITLE: Biphenylenes. XXXI. Condensation of

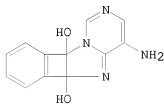
benzocyclobutene-1,2-dione with aliphatic and heterocyclic 1,2-diamines and the synthesis of cis-2-cyano-3-(2'-cyanovinyl)1,4-diazabiphenylene  
 AUTHOR(S): Barton, John W.; Goodland, Michael C.; Gould, Ken J.; McOmie, John F. W.; Mound, W. Roderick; Saleh, Sadiq A.

CORPORATE SOURCE: Sch. Chem., Univ. Bristol, Bristol, UK  
 SOURCE: Tetrahedron (1979), 35(2), 241-7  
 CODEN: TETRAB; ISSN: 0040-4020

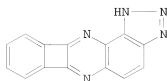
DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 91:107952  
 GI



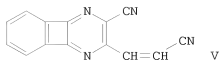
II



III



IV



V

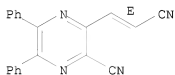
AB Condensation of benzocyclobutene-1,2-dione (I) with the title diamines did not, except in the case of 4,5-diaminobenzotriazole, give 1,4-diazabiphenylenes, but gave a variety of products, six of which were derivs. of new heterocyclic systems. E.g., I with ethylenediamine and 4,5-diaminopyrimidine gave 69% imidazolium acetate II and 83% diol III, resp. I with 4,5-diaminobenzotriazole gave 80% pentaazaindenobiphenylene IV which on N-amination and Pb(OAc)<sub>4</sub> oxidation gave 2.5% diazabiphenylene V.

IT 71209-25-1P 71209-26-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

RN 71209-25-1 CAPLUS

CN Pyrazinecarbonitrile, 3-(2-cyanoethenyl)-5,6-diphenyl-, (E)- (9CI) (CA INDEX NAME)

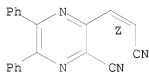
Double bond geometry as shown.



RN 71209-26-2 CAPLUS

CN Pyrazinecarbonitrile, 3-(2-cyanoethenyl)-5,6-diphenyl-, (Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L14 ANSWER 273 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1979:455695 CAPLUS

DOCUMENT NUMBER: 91:55695

TITLE: Negative ion mass spectra of cyano substituted heterocycles

AUTHOR(S): Holzmann, G.; Rothkopf, H. W.

CORPORATE SOURCE: Inst. Org. Chem., Free Univ. Berlin, Berlin, Fed. Rep. Ger.

SOURCE: Organic Mass Spectrometry (1978), 13(11), 636-41  
 CODEN: ORMSBG; ISSN: 0030-493X

DOCUMENT TYPE: Journal

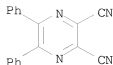
LANGUAGE: German

AB The neg. ion mass spectra are reported of 21 dicyano heteroarom. compds. The spectra are useful for the anal. of isomeric compds. All the compds. fragment to give [(CN)<sub>2</sub>]<sup>•-</sup>, [C<sub>4</sub>N<sub>3</sub>]<sup>-</sup>, or [C<sub>4</sub>N<sub>4</sub>]<sup>•-</sup> ions. The ion structures were identified using metastable transitions and collisional activation spectra. The fragmentations of tetracyano compds. are explained by rearrangement processes of mol. anions.

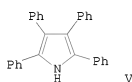
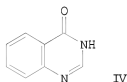
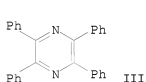
IT 52197-23-6  
 RL: PRP (Properties)  
 (neg. ion mass spectrum of)

RN 52197-23-6 CAPLUS

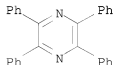
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 274 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1979:420451 CAPLUS  
 DOCUMENT NUMBER: 91:20451  
 TITLE: Some derivatives of benzoin  
 AUTHOR(S): Mendel, Arthur; Lillquist, Gerald J.  
 CORPORATE SOURCE: Environ. Lab., 3M Co., St. Paul, MN, 55133, USA  
 SOURCE: Journal of Heterocyclic Chemistry (1979), 16(3), 617-19  
 CODEN: JHTCAD; ISSN: 0022-152X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 91:20451  
 GI



AB Condensation of  $\text{PhCOCHPhOH}$  (I) with 2- $\text{H}_2\text{NC}_6\text{H}_4\text{CONH}_2$  (II) in the presence of  $\text{HCl}$  at  $150^\circ$  for 8 h gave 34% 2-( $\text{H}_2\text{NCO}$ ) $\text{C}_6\text{H}_4\text{NHCHPhCOPh}$  and a small amount of tetraphenylpyrazine (III). Condensation of I and II in the presence of  $\text{NH}_4\text{OAc}$  gave only III, whereas treatment of I and II with  $\text{NH}_4\text{O}_2\text{CH}$  gave III and the quinazolinone IV. Treatment of I with  $\text{NH}_4\text{OAc}$  at  $120^\circ$  1 day gave III and tetraphenylpyrrole (V). Condensation of I with 2-aminothiazole gave V,  $\text{PhCOCOPh}$ , and  $\text{PhCH}_2\text{COPh}$ .  
 IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, by cyclocondensation reaction of benzoin in presence of antranilamide)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 275 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1979:186902 CAPLUS  
 DOCUMENT NUMBER: 90:186902  
 ORIGINAL REFERENCE NO.: 90:29701a, 29704a



TITLE: Syntheses with nitriles, LIV. Reduction of oximinomalonitrile to aminomalonitrile using Raney catalysts

AUTHOR(S): Junek, Hans; Mittelbach, Martin

CORPORATE SOURCE: Inst. Org. Chem., Univ. Graz, Graz, Austria

SOURCE: Zeitschrift fuer Naturforschung, Teil B: Anorganische Chemie, Organische Chemie (1979), 34B(2), 280-2

CODEN: ZNBAD2; ISSN: 0340-5087

DOCUMENT TYPE: Journal

LANGUAGE: German

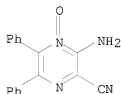
OTHER SOURCE(S): CASREACT 90:186902

AB An improved synthesis of aminomalononitrile H<sub>2</sub>NCH(CN)<sub>2</sub> (I) by using Raney-catalyst for the reduction of HON:C(CN)<sub>2</sub> (II) at H<sub>2</sub>-pressure of 4 atm and 20° was given. Due to the reactivity of II some new derivs. of oximinocyanoacetamide are obtained by O- and N-acylation. Condensation of III with benzilmonoxime gave 2-amino-5,6-diphenylpyrazinecarbonitrile; with N-phenylformamide 2-amino-2,2-dicyano-1-(N-phenylimino)-acetaldehyde was obtained.

IT 70186-74-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction of, with trichlorophosphorane)

RN 70186-74-2 CAPLUS

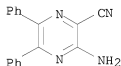
CN Pyrazinecarbonitrile, 3-amino-5,6-diphenyl-, 4-oxide (9CI) (CA INDEX NAME)



IT 70186-75-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 70186-75-3 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 276 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1978:563542 CAPLUS

DOCUMENT NUMBER: 89:163542

ORIGINAL REFERENCE NO.: 89:25349a,25352a

TITLE: Synthesis of new pyrazine compounds from diaminomaleonitrile

AUTHOR(S): Tsuda, Tadataka; Ueda, Hiroo

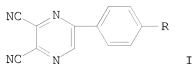
CORPORATE SOURCE: Coll. Agric., Univ. Osaka Prefect., Sakai, Japan

SOURCE: Nippon Nogei Kagaku Kaishi (1978), 52(5), 213-17

CODEN: NNKKAA; ISSN: 0002-1407

DOCUMENT TYPE: Journal

LANGUAGE: Japanese  
 OTHER SOURCE(S): CASREACT 89:163542  
 GI

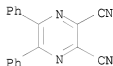


AB Pyrazines I (R = OH, OMe, OEt, Me, Et, Cl, I, H, NO<sub>2</sub>, Br) were prepared by the reaction of diaminomaleonitrile with 4-RC<sub>6</sub>H<sub>4</sub>COCHO, which were prepared by the oxidation of acetophenones with SeO<sub>2</sub> in dioxane. Similarly, 5,6-disubstituted derivs. of dicyanopyrazine were prepared I (R = H, Br) had a slight fungicide activity.

IT 52197-23-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 277 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1978:171793 CAPLUS

DOCUMENT NUMBER: 88:171793

ORIGINAL REFERENCE NO.: 88:27075a,27078a

TITLE: 1,2-Dihydropyrazine derivatives

INVENTOR(S): Ohtsuka, Yozo; Ito, Masaru; Tomita, Nobuo

PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan; Sagami Chemical Research Center

SOURCE: Ger. Offen., 48 pp.

CODEN: GWXXBX

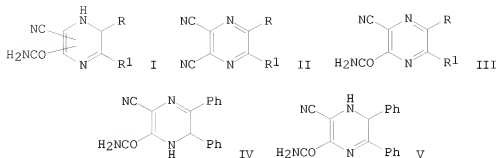
DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 2736230	A1	19780216	DE 1977-2736230	19770811
JP 53022529	A	19780302	JP 1976-96020	19760813
JP 57045260	B	19820927		
PRIORITY APPLN. INFO.:			JP 1976-96020	A 19760813
GI				



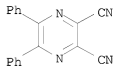
AB Title compds. (I; R, R1 = Ph, condensed aromatic, or heterocyclic groups), fast yellow dyes showing a green to yellow luminescence, are prepared (a) by condensing  $\text{RCH:NC(CN):C(CN)NH}_2$  with  $\text{R}_1\text{CHO}$  in the presence of base to give  $\text{RCH:NC(CN):C(CONH}_2\text{)N:CHR}_1$ , followed by ring closure, or (b) by selective hydrolysis of II to III, followed by selective reduction. Thus, reaction of  $\text{PhCH:NC(CN):C(CN)NH}_2$  [56029-18-6] with  $\text{PhCHO}$  [100-52-7] in EtOH containing Et3N gave  $\text{PhCH:NC(CN):C(CONH}_2\text{)N:CHPh}$  [66371-72-0], which was cyclized by heating with  $\text{Me}_2\text{SO}$  to form a mixture of IV [66371-73-1] and V [66371-74-2]. The IV-V mixture, resolvable by fractional recrystn., showed (Japanese standard test K 5101) a brilliant greenish yellow tone, solvent stability 4-5 (1 lowest, 5 highest), and water stability 5, and lightfastness (Fade-O-meter) 7-8.

IT 52197-23-6

RL: RCT (Reactant); RACT (Reactant or reagent)  
(hydrolysis of, selective, by hydrogen peroxide)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)

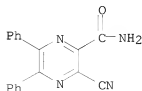


IT 66371-68-4P

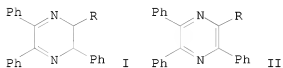
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and selective reduction of)

RN 66371-68-4 CAPLUS

CN Pyrazinecarboxamide, 3-cyano-5,6-diphenyl- (9CI) (CA INDEX NAME)

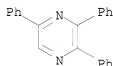


ORIGINAL REFERENCE NO.: 88:21471a,21474a  
 TITLE: Synthesis of some 2,3-dihydropyrazines, pyrazines and piperazines  
 AUTHOR(S): Baliah, V.; Pandiarajan, K.  
 CORPORATE SOURCE: Dep. Chem., Annamalai Univ., Annamalai Nagar, India  
 SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1978), 16B(1), 73-4  
 CODEN: IJSBDB; ISSN: 0376-4699  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 88:136562  
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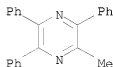


AB 2,3-Dihydropyrazines I (R = H, Me, Et, Me<sub>2</sub>CH, Bu) were prepared in 70-85% yields by condensation of benzil with 1,2-ethanediamines. Dehydrogenation of I by refluxing with Me(CH<sub>2</sub>)<sub>4</sub>ONa in Me(CH<sub>2</sub>)<sub>4</sub>OH gave 60-75% II. Reduction of I (R = H) with Na and Me(CH<sub>2</sub>)<sub>4</sub>OH gave two isomeric piperazines.

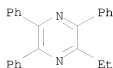
IT 36476-77-4P 66042-94-2P 66042-95-3P  
 66042-96-4P 66042-97-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation of)  
 (preparation of)  
 RN 36476-77-4 CAPLUS  
 CN Pyrazine, 2,3,5-triphenyl- (CA INDEX NAME)



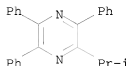
RN 66042-94-2 CAPLUS  
 CN Pyrazine, methyltriphenyl- (9CI) (CA INDEX NAME)



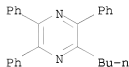
RN 66042-95-3 CAPLUS  
 CN Pyrazine, ethyltriphenyl- (9CI) (CA INDEX NAME)



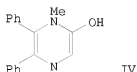
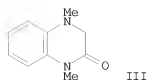
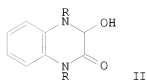
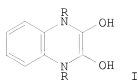
RN 66042-96-4 CAPLUS  
 CN Pyrazine, (1-methylethyl)triphenyl- (9CI) (CA INDEX NAME)



RN 66042-97-5 CAPLUS  
 CN Pyrazine, butyltriphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 279 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1978:135914 CAPLUS  
 DOCUMENT NUMBER: 88:135914  
 ORIGINAL REFERENCE NO.: 88:21355a,21358a  
 TITLE: Electrochemical reduction and reduction using borohydrides of nitrogen heterocycles containing O:C-C:O, O:C-C:N and N:C-C:N bonds  
 AUTHOR(S): Armand, Joseph; Armand, Yvette; Boulares, Line  
 CORPORATE SOURCE: Lab. Physicochim. Solutions, Univ. Paris VI, Paris, Fr.  
 SOURCE: Comptes Rendus des Seances de l'Academie des Sciences, Serie C: Sciences Chimiques (1978), 286(1), 17-20  
 CODEN: CHDCAQ; ISSN: 0567-6541  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French  
 GI



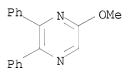
AB The electrochem. reduction of 1,4-dimethylquinoxalinedione, quinoxalinedione, and 2,3-dimethoxyquinoxaline gives unstable enediols, e. g., I (R = Me, H), which isomerized to 1,2-dihydro derivs. II (same R). Further reduction of II (R = Me) gives either III or an unknown product. Similarly, electrochem. reduction of 1-methyl-5,6-diphenyl-2-pyrazinone, 5,6-diphenylpyrazinone, and of 2,3-diphenyl-5-methoxypyrazine involve the intermediate enamine, e.g., IV. Results are given for the reduction of these heterocycles with KBH<sub>4</sub>, NaBH<sub>4</sub>, and LiBH<sub>4</sub>.

IT 34121-90-9

RL: RCT (Reactant); RACT (Reactant or reagent)  
(electrochem. reduction of)

RN 34121-90-9 CAPLUS

CN Pyrazine, 5-methoxy-2,3-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 280 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1978:121051 CAPLUS

DOCUMENT NUMBER: 88:121051

ORIGINAL REFERENCE NO.: 88:19005a,19008a

TITLE: Acid-catalyzed formation of imidazoles from

2H-azirines or vinylazides and nitriles

AUTHOR(S): Bader, Heinz; Hansen, Hans Juergen

CORPORATE SOURCE: Inst. Chim. Org., Univ. Fribourg, Fribourg, Switz.

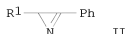
SOURCE: Helvetica Chimica Acta (1978), 61(1), 286-304

CODEN: HCACAV; ISSN: 0018-019X

DOCUMENT TYPE: Journal

LANGUAGE: German

GI

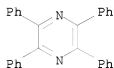


AB Imidazoles I (R = Me, decyl, CMe<sub>3</sub>, Ph, CH<sub>2</sub>Ph, (CH<sub>2</sub>)<sub>4</sub>CN, vinyl, CH<sub>2</sub>CO<sub>2</sub>Et, R<sub>1</sub> = Ph; R = Ph, R<sub>1</sub> = H, Me) were obtained by treating azirines II or PhCN<sub>3</sub>:CHR<sub>1</sub> with RCN in the presence of BF<sub>3</sub>.Et<sub>2</sub>O, with the exception that PhCN<sub>3</sub>:CH<sub>2</sub> gave AcNHPh. A mixture of 1-ethyl-4-methyl-2,5-diphenylimidazole and 1-ethyl-5-methyl-2,4-diphenylimidazole was obtained by treating II (R<sub>1</sub> = Me), I (R = Ph, R<sub>1</sub> = Me), or 3-methyl-2-phenyl-2H-azirine with Et<sub>3</sub>O.BF<sub>4</sub> and PhCN.

IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 281 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1978:104305 CAPLUS

DOCUMENT NUMBER: 88:104305

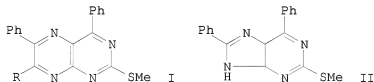
ORIGINAL REFERENCE NO.: 88:16349a,16352a

TITLE: Ring transformations in reactions of heterocyclic compounds with nucleophiles. XIX. Pteridine studies. (IV). On the mechanism of the conversion of 2-(methylthio)-4,6,7-triphenylpteridine into 2-amino-4,6,7-triphenylpteridine and 6,8-diphenyl-2-(methylthio)purine  
 Nagel, Joek; Van der Plas, Henk C.  
 Lab. Org. Chem., Agric. Univ., Wageningen, Neth.  
 Heterocycles (1977), 7(1), 205-16  
 CODEN: HTCYAM; ISSN: 0385-5414

DOCUMENT TYPE: Journal

LANGUAGE: English

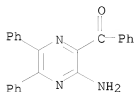
GI



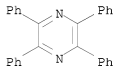
AB In the ring contraction of the pteridine I (R = C<sub>6</sub>D<sub>5</sub>), the resulting purine II contained only 13% D label. This indicates that the ring contraction proceeds mainly by expulsion of C(7). Amination of I (R = Ph) occurs 50-85% by a SN(ANRORC) ring opening-ring closure mechanism to give the 2-amino derivative

IT 65549-14-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction of, with urea-15N)

RN 65549-14-6 CAPLUS  
CN Methanone, (3-amino-5,6-diphenylpyrazinyl)phenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 282 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1978:89745 CAPLUS  
DOCUMENT NUMBER: 88:89745  
ORIGINAL REFERENCE NO.: 88:14075a,14078a  
TITLE: Metal addition to aryldiene- and alkylidenemetal  
amides and consecutive reactions  
AUTHOR(S): Hoberg, Heinz; Griebisch, Udo  
CORPORATE SOURCE: Max-Planck-Inst. Kohlenforsch., Muelheim, Fed. Rep.  
Ger.  
SOURCE: Justus Liebigs Annalen der Chemie (1977), (9), 1516-28  
CODEN: JLABCF; ISSN: 0075-4617  
DOCUMENT TYPE: Journal  
LANGUAGE: German  
AB The reaction of azomethines RN:CR1R2 (R = Ph, H, Me3C, Et2Al,  
(Me2CHCH2)2Al, Et3AlNa, Me3Si; R1 = Ph, cyclohexyl; R2 = H, Ph) with  
metals (Na, Li, K, Mg) in solvents (benzene, hexane, Et2O, THF, Me2SO,  
MeOCH2CH2OMe, Me2NCH2CH2NMe2) were investigated. Thus, Et2AlN:CHPh  
undergoes reductive dimerization in nonpolar solvents to give e.g.  
(Et2Al)KNCHPhCHPhNK(AlEt2) whereas in polar solvents the heterocycles  
2,4,5-triphenylimidazole and 2,3,5,6-tetraphenylpyrazine were also formed.  
IT 642-04-6F  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 642-04-6 CAPLUS  
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

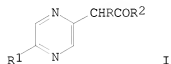


L14 ANSWER 283 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1978:37835 CAPLUS  
DOCUMENT NUMBER: 88:37835  
ORIGINAL REFERENCE NO.: 88:5949a,5952a  
TITLE: 2,3-Diphenyl-5-ethylpyrazine  
INVENTOR(S): Schwartz, Norman; Mohrbacher, Richard J.  
PATENT ASSIGNEE(S): McNeil Laboratories, Inc., USA  
SOURCE: U.S., 11 pp. Division of U.S. 3,761,477.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 5  
PATENT INFORMATION:



PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4046763	A	19770906	US 1972-307684	19721117
US 3761477	A	19730925	US 1968-774486	19681108
US 3865826	A	19750211	US 1972-307685	19721117

PRIORITY APPLN. INFO.:  
 GI US 1968-774486 A3 19681108

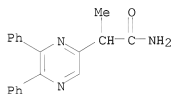


AB Pyrazineacetic acid derivs. I (R = Me, Et, R1 = H, Ph, p-ClC6H4, R2 = OH, NH2, NHCH2Ph), useful as inflammation inhibitors and UV light absorbers, were prepared from appropriate chloropyrazine. Thus, chloropyrazine condensed with MeC(CO2Et)2 gave di-Et methyl(pyrazinyl)malonate which was decarboxylated and saponified to give I (R = Me, R1 = H, R2 = OH) which was treated with NH3 to yield I (R = Me, R1 = H, R2 = NH2).

IT 36932-93-1P 36932-94-2P 36932-95-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and UV light absorption properties of)

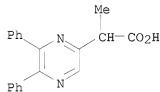
RN 36932-93-1 CAPLUS

CN Pyrazineacetamide,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



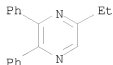
RN 36932-94-2 CAPLUS

CN Pyrazineacetic acid,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)

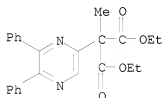


RN 36932-95-3 CAPLUS

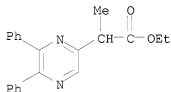
CN Pyrazine, 5-ethyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



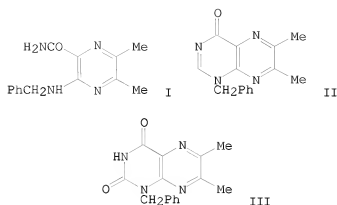
IT 36932-91-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and decarboxylation of)  
 RN 36932-91-9 CAPLUS  
 CN Propanedioic acid, (5,6-diphenylpyrazinyl)methyl-, diethyl ester (9CI)  
 (CA INDEX NAME)



IT 36932-92-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation, saponification, and amidation of)  
 RN 36932-92-0 CAPLUS  
 CN Pyrazineacetic acid,  $\alpha$ -methyl-5,6-diphenyl-, ethyl ester (9CI) (CA  
 INDEX NAME)



L14 ANSWER 284 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1977:552132 CAPLUS  
 DOCUMENT NUMBER: 87:152132  
 ORIGINAL REFERENCE NO.: 87:24075a,24078a  
 TITLE: Amidinoacetamides in the synthesis of pyrazines and  
 pteridines  
 AUTHOR(S): Keir, William F.; MacLennan, Alexander H.; Wood,  
 Hamish C. S.  
 CORPORATE SOURCE: Paisley Coll. Technol., Paisley, UK  
 SOURCE: Journal of the Chemical Society, Perkin Transactions  
 1: Organic and Bio-Organic Chemistry (1972-1999)  
 (1977), (11), 1321-5  
 CODEN: JCPRB4; ISSN: 0300-922X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 87:152132  
 GI

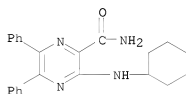


AB Cyclocondensation of 2-(substituted amidino)-2-aminoacetamides with 1,2-dicarbonyl compds. gave 3-(substituted amino)-pyrazine-2-carboxamides which with one-carbon units gave 1-substituted pteridin-4(1H)-ones and -2,4-(1H)-diones. E.g.,  $\text{PhCH}_2\text{NHC}(\text{:NH})\text{CH}(\text{NH}_2)\text{CONH}_2\cdot\text{HCl}$  with biacetyl gave 80% pyrazine I which with  $\text{HCO}_2\text{H}$  and  $\text{ClCO}_2\text{Et}$  gave 60% pteridinone II and 59% pteridinedione III, resp.

IT 64344-98-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and cyclocondensation reaction of, with diethoxydimethylformamide)

RN 64344-98-5 CAPLUS

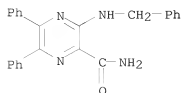
CN Pyrazinecarboxamide, 3-(cyclohexylamino)-5,6-diphenyl- (9CI) (CA INDEX NAME)



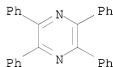
IT 64344-96-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and cyclocondensation reactions of, with formic acid and Et chloroformate)

RN 64344-96-3 CAPLUS

CN Pyrazinecarboxamide, 5,6-diphenyl-3-[(phenylmethyl)amino]- (9CI) (CA INDEX NAME)

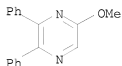


L14 ANSWER 285 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1977:154811 CAPLUS  
 DOCUMENT NUMBER: 86:154811  
 ORIGINAL REFERENCE NO.: 86:24307a,24310a  
 TITLE: Mode of formation of deoxybenzoin in the reaction of  
 N-benzyl- $\alpha$ -phenylnitron with potassium  
 hydroxide-tert-butyl alcohol  
 AUTHOR(S): Hall, J. Herbert; Gisler, Matthias R.  
 CORPORATE SOURCE: Dep. Chem. Biochem., South. Illinois Univ.,  
 Carbondale, IL, USA  
 SOURCE: Journal of Organic Chemistry (1977), 42(7), 1133-6  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 86:154811  
 AB The conversion of the nitron  $\text{PhCH}_2\text{N}(\text{O})\text{:CHPh}$  to deoxybenzoin by treatment  
 with KOH in refluxing tert-BuOH occurred via base attack on an aldol type  
 conversion product  $\text{PhCH}_2\text{N}(\text{OH})\text{CHPhCHPhN}(\text{O})\text{:CHPh}$  (I). This compound formed in  
 moderate yield by treatment of the nitron with Li dimsylate. Treatment  
 of I with KOH-tert-BuOH gave deoxybenzoin, benzoic acid, benzamide, benzyl  
 alcohol, tetraphenylpyrazine, and a trace of benzaldehyde. A scheme is  
 proposed to account for these products.  
 IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



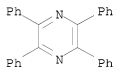
L14 ANSWER 286 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1977:147776 CAPLUS  
 DOCUMENT NUMBER: 86:147776  
 ORIGINAL REFERENCE NO.: 86:23125a,23128a  
 TITLE: Electrochemical reduction of 5,6-diphenyl-2-pyrazinone  
 and some methylated derivatives  
 AUTHOR(S): Armand, Yvette; Boulares, Line  
 CORPORATE SOURCE: Lab. Physicochim. Solutions, Univ. Paris VI, Paris,  
 Fr.  
 SOURCE: Comptes Rendus des Seances de l'Academie des Sciences,  
 Serie C: Sciences Chimiques (1977), 284(1), 13-15  
 CODEN: CHDCAQ; ISSN: 0567-6541  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French  
 AB 5,6-Diphenyl-2(1H)-pyrazinone [18591-57-6] and its N-Me derivative  
 [62251-28-9] are electrochem. reduced to the 3,4-dihydro derivs. which  
 isomerize to the 3,6-dihydro derivs. The electrochem. reduction of these  
 latter compds. leads to 3,4,5,6-tetrahydro derivs. 2,3-Diphenyl-6-  
 methoxypyrazine [34121-90-9] has a behavior different from that  
 of alkyl- and arylpyrazines. The electrochem. reduction does not lead to a  
 1,4-dihydro derivative but to a 4,5-dihydro derivative, which isomerizes to the  
 electrochem. reducible 2,5-dihydro derivative  
 IT 34121-90-9

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reduction of, electrochem.)  
RN 34121-90-9 CAPLUS  
CN Pyrazine, 5-methoxy-2,3-diphenyl- (8CI, 9CI) (CA INDEX NAME)



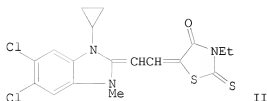
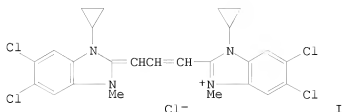
L14 ANSWER 287 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1977:138857 CAPLUS  
DOCUMENT NUMBER: 86:138857  
ORIGINAL REFERENCE NO.: 86:21797a,21800a  
TITLE: A new polymetal compound from N-benzylidenealuminum  
amide and its use in preparative chemistry  
AUTHOR(S): Hoberg, Heinz; Griebisch, Udo  
CORPORATE SOURCE: Max-Planck-Inst. Kohlenforsch., Mueheim, Fed. Rep.  
Ger.  
SOURCE: Synthesis (1976), (12), 830-2  
CODEN: SYNTBF; ISSN: 0039-7881  
DOCUMENT TYPE: Journal  
LANGUAGE: German

AB PhCH:NALEt2 was treated with a suspension of naphthalene and K in THF to  
yield PhCHKNKALEt2 which underwent transmetalation with LiBr to yield  
[PhCHNALEt2]2- Li+K+ (I). Reactions of I with various electrophiles  
(e.g., MeI, EtCN) were described.  
IT 642-04-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 642-04-6 CAPLUS  
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 288 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1976:594074 CAPLUS  
DOCUMENT NUMBER: 85:194074  
ORIGINAL REFERENCE NO.: 85:31037a,31040a  
TITLE: Polymethine dyes with N-cycloalkyl substituents  
AUTHOR(S): Sturmer, David M.; Freeman, John Paul; Ho, Margaret S.  
CORPORATE SOURCE: UK  
SOURCE: Research Disclosure (1976), 149, 58-61 (No. 14978)  
CODEN: RSDSBB; ISSN: 0374-4353  
DOCUMENT TYPE: Journal; Patent  
LANGUAGE: English  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RD 149078	----	19760910	-----	-----



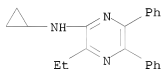
AB Cyanine and merocyanine dyes containing the N-cyclopropyl and N-cyclopentyl groups and their intermediates were prepared, the dyes are useful as sensitizers in Ag halide emulsions. Typical examples of the dyes prepared are: I [60879-07-4] and II [60879-08-5].

IT 60878-76-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 60878-76-4 CAPLUS

CN Pyrazinamine, N-cyclopropyl-3-ethyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 289 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1976:593017 CAPLUS

DOCUMENT NUMBER: 85:193017

ORIGINAL REFERENCE NO.: 85:30879a,30882a

TITLE: Nucleosides, XIX. Synthesis, properties and chemical behavior of 1(3)-methyl-6,7-diphenyl-3(1)-(β-D-ribofuranosyl)lumazine derivatives

Kobayashi, Kiyotaka; Pfleiderer, Wolfgang

CORPORATE SOURCE: Fachber. Chem., Univ. Konstanz, Konstanz, Fed. Rep. Ger.

SOURCE: Chemische Berichte (1976), 109(9), 3194-207

CODEN: CHBEAM; ISSN: 0009-2940

DOCUMENT TYPE:

Journal

LANGUAGE:

German

GI For diagram(s), see printed CA Issue.

AB Ribofuranosyllumazine I (R = R2, R1 = Me, R3-R5 = H) (II) was prepared by coupling 1-O-acetyl-2,3,5-tri-O-benzoyl-β-D-ribofuranose (III) with O-trimethylsilyl derivative of I (R = H, R1 = Me) followed by alkaline hydrolysis.

Similarly I (R = Me, R1 = R2, R3-R5 = H) (IV) was prepared from I (R = Me, R1 = H) and III. Isopropylidenation of II and IV gave I (R = R2, R1 = H, R4R5 = CMe2) (V) and I (R = H, R1 = R2, R4R5 = CMe2) (VI). In the alkaline hydrolysis of IV-VI the nucleophilic attack occurred at the CO group at C-2 with cleavage of the pyrimidine ring and formation of the corresponding 3-amino-5,6-diphenyl-2-pyrazinecarboxamides.

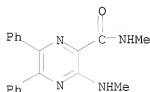
IT 25472-83-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, with ethyl chloroformate)

RN 25472-83-7 CAPLUS

CN Pyrazinecarboxamide, N-methyl-3-(methylamino)-5,6-diphenyl- (8CI, 9CI) (CA INDEX NAME)



IT 60980-87-2P 60980-97-4P 60980-98-5P

60980-99-6P 60981-00-2P 60981-01-3P

60981-02-4P 60981-03-5P 60981-04-6P

60981-05-7P

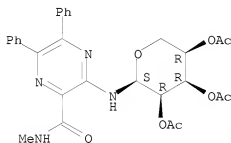
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of)

RN 60980-87-2 CAPLUS

CN Pyrazinecarboxamide, N-methyl-5,6-diphenyl-3-[(2,3,4-tri-O-acetyl- $\alpha$ -D-ribofuranosyl)amino]- (9CI) (CA INDEX NAME)

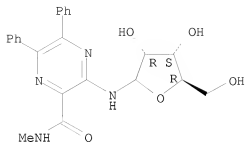
Absolute stereochemistry.



RN 60980-97-4 CAPLUS

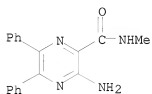
CN Pyrazinecarboxamide, N-methyl-5,6-diphenyl-3-(D-ribofuranosylamino)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 60980-98-5 CAPLUS

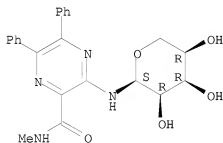
CN Pyrazinecarboxamide, 3-amino-N-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 60980-99-6 CAPLUS

CN Pyrazinecarboxamide, N-methyl-5,6-diphenyl-3-( $\alpha$ -D-ribofuranosylamino)- (9CI) (CA INDEX NAME)

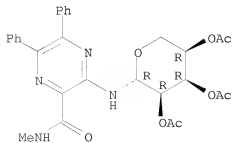
Absolute stereochemistry.



RN 60981-00-2 CAPLUS

CN Pyrazinecarboxamide, N-methyl-5,6-diphenyl-3-[(2,3,4-tri-O-acetyl- $\beta$ -D-ribofuranosyl)amino]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

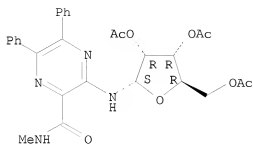




RN 60981-01-3 CAPLUS

CN Pyrazinecarboxamide, N-methyl-5,6-diphenyl-3-[(2,3,5-tri-O-acetyl- $\alpha$ -D-ribofuranosyl)amino]- (9CI) (CA INDEX NAME)

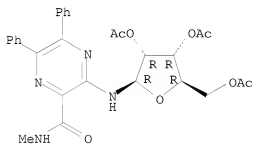
Absolute stereochemistry.



RN 60981-02-4 CAPLUS

CN Pyrazinecarboxamide, N-methyl-5,6-diphenyl-3-[(2,3,5-tri-O-acetyl- $\beta$ -D-ribofuranosyl)amino]- (9CI) (CA INDEX NAME)

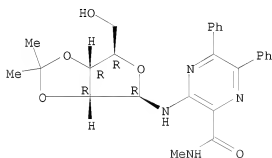
Absolute stereochemistry.



RN 60981-03-5 CAPLUS

CN Pyrazinecarboxamide, N-methyl-3-[[2,3-O-(1-methylethylidene)- $\beta$ -D-ribofuranosyl]amino]-5,6-diphenyl- (9CI) (CA INDEX NAME)

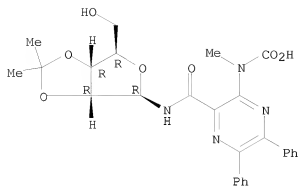
Absolute stereochemistry.



RN 60981-04-6 CAPLUS

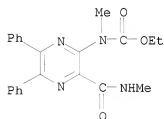
CN Carbamic acid, methyl[3-[[[2,3-O-(1-methylethylidene)- $\beta$ -D-ribofuranosyl]amino]carbonyl]-5,6-diphenylpyrazinyl]-, monosodium salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.

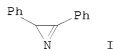


● Na

RN 60981-05-7 CAPLUS  
 CN Carbamic acid, methyl[3-[(methylamino)carbonyl]-5,6-diphenylpyrazinyl]-, ethyl ester (9CI) (CA INDEX NAME)



L14 ANSWER 290 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1976:559785 CAPLUS  
 DOCUMENT NUMBER: 85:159785  
 ORIGINAL REFERENCE NO.: 85:25572h,25573a  
 TITLE: Azirine alkylation  
 AUTHOR(S): Deyrup, James A.; Szabo, William A.  
 CORPORATE SOURCE: Dep. Chem., Univ. Florida, Gainesville, FL, USA  
 SOURCE: Tetrahedron Letters (1976), (18), 1413-14  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB Alkylation of the azirine I with CF<sub>3</sub>SO<sub>3</sub>Me gave 46% PhCH:CPhN:CPhCPh:N+HMe (II). The initial step is alkylation of I followed by ring opening to give PhC<sup>+</sup>H:CPh:NMe. The unstable cation alkylates a second mol. of I and proceeds, in turn, to give II.  
 IT 60715-09-5P

RL: SPN (Synthetic preparation); PREP (Preparation of)  
(preparation of)

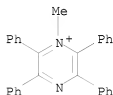
RN 60715-09-5 CAPLUS

CN Pyrazinium, 1-methyl-2,3,5,6-tetraphenyl-, salt with  
trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 60715-08-4

CMF C29 H23 N2



CM 2

CRN 37181-39-8

CMF C F3 O3 S



L14 ANSWER 291 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1976:523970 CAPLUS

DOCUMENT NUMBER: 85:123970

ORIGINAL REFERENCE NO.: 85:19909a,19912a

TITLE: Pyrazines

INVENTOR(S): Weitz, Hans M.; Fischer, Rolf

PATENT ASSIGNEE(S): BASF A.-G., Fed. Rep. Ger.

SOURCE: Ger. Offen., 9 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

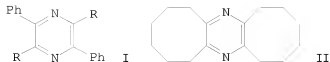
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2425355	A1	19751204	DE 1974-2425355	19740525
CA 1041510	A1	19781031	CA 1975-225859	19750428
GB 1499768	A	19780201	GB 1975-19770	19750512
CH 593268	A5	19771130	CH 1975-6512	19750521
NL 7506038	A	19751127	NL 1975-6038	19750522
BE 829444	A1	19751124	BE 1975-156672	19750523
FR 2272086	A1	19751219	FR 1975-16168	19750523
FR 2272086	B3	19781201		
JP 51001483	A	19760108	JP 1975-62036	19750526
PRIORITY APPLN. INFO.:			DE 1974-2425355	A 19740525

GI



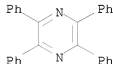
AB Pyrazines (I, R = Ph, Et, Me), useful as intermediates for the preparation of dyes, pharmaceuticals, and fungicides (no data), were prepared in 44-72% yields by heating a nitro-substituted oxirane with NH<sub>3</sub> in an autoclave 6 hr at 100° and 65 atmospheric Addnl. obtained was 94% II.

IT 642-04-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 292 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1976:150593 CAPLUS

DOCUMENT NUMBER: 84:150593

ORIGINAL REFERENCE NO.: 84:24475a,24478a

TITLE: Synthesis of pyrazines from 2-nitrooxiranes and ammonia

AUTHOR(S): Fischer, Rolf Hartmuth; Weitz, Hans M.

CORPORATE SOURCE: Ammoniaklab., BASF A.-G., Ludwigshafen, Fed. Rep. Ger.

SOURCE: Synthesis (1976), (1), 53-4

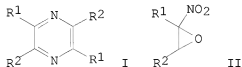
CODEN: SYNTBF; ISSN: 0039-7881

DOCUMENT TYPE: Journal

LANGUAGE: German

OTHER SOURCE(S): CASREACT 84:150593

GI

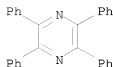


AB Pyrazines I [R1 = Ph, Me, Et, R2 = Ph, R1R2 = (CH<sub>2</sub>)<sub>6</sub>] were obtained in 44-94% yields by heating epoxides II, prepared in 50-84% yields by epoxidn. of R2CH:CR1NO<sub>2</sub> with H<sub>2</sub>O<sub>2</sub>, with NH<sub>3</sub> (1) in an autoclave 6 hr at 50-100°.

IT 642-04-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

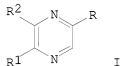
RN 642-04-6 CAPLUS  
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 293 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1976:135717 CAPLUS  
DOCUMENT NUMBER: 84:135717  
ORIGINAL REFERENCE NO.: 84:22067a,22070a  
TITLE: Pyrazinylmalonic acid esters and salts and  
pyrazinylacetic acids, esters and salts  
INVENTOR(S): Schwartz, Norman; Mohrbacher, Richard J.  
PATENT ASSIGNEE(S): McNeil Laboratories, Inc., USA  
SOURCE: U.S., 11 pp. Division of U.S. 3,761,477.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 5  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 3928347	A	19751223	US 1972-307682	19721117
US 3761477	A	19730925	US 1968-774486	19681108
US 3865826	A	19750211	US 1972-307685	19721117
PRIORITY APPLN. INFO.:			US 1968-774486	A3 19681108

GI

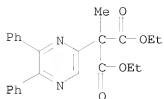


AB The pyrazine derivs. I [R = CMe(CO2Et)2 CHMeCO2Et, CH2CO2H, CH2CO2NH2, Et; R1 = H, Ph, p-ClC6H4; R2 = H, Ph] were prepared Thus, PhCOCHO was cyclized with H2NCH2CONH2 and the I (R = OH, R1 = Ph, R2 = H) treated with POC13 followed by MeCH(CO2Et)2 to give I [R = MeC(CO2Et)2, R1 = Ph, R2 = H], which was hydrolyzed and decarboxylated to give I (R = CHMeCO2H, R1 = Ph, R2 = H). I were useful for filters of uv light. At 100 mg/kg I [R = MeC(CO2Et)2, R1 = Ph, R2 = H] inhibited kaolin induced edema by 43%.

IT 36932-91-9P 36932-92-0P 36932-93-1P  
36932-94-2P 36932-95-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and sunscreensing property of)

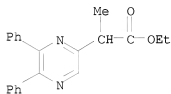
RN 36932-91-9 CAPLUS

CN Propanedioic acid, (5,6-diphenylpyrazinyl)methyl-, diethyl ester (9CI)  
(CA INDEX NAME)



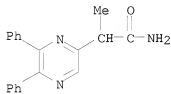
RN 36932-92-0 CAPLUS

CN Pyrazineacetic acid,  $\alpha$ -methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



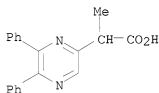
RN 36932-93-1 CAPLUS

CN Pyrazineacetamide,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



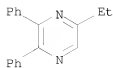
RN 36932-94-2 CAPLUS

CN Pyrazineacetic acid,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 36932-95-3 CAPLUS

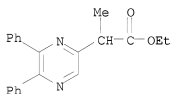
CN Pyrazine, 5-ethyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



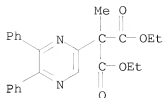
L14 ANSWER 294 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1976:59556 CAPLUS  
 DOCUMENT NUMBER: 84:59556  
 ORIGINAL REFERENCE NO.: 84:9807a,9810a  
 TITLE: Derivatives of 5,6-diphenyl pyrazinylmalonates and pyrazineacetic acids  
 INVENTOR(S): Schwartz, Norman; Mohrbacher, Richard J.  
 PATENT ASSIGNEE(S): McNeil Laboratories, Inc., USA  
 SOURCE: U.S., 13 pp. Division of U.S. 3,761,477.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 5  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3901885	A	19750826	US 1972-307681	19721117
US 3761477	A	19730925	US 1968-774486	19681108
US 3865826	A	19750211	US 1972-307685	19721117
PRIORITY APPLN. INFO.:			US 1968-774486	A3 19681108

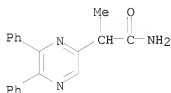
GI For diagram(s), see printed CA Issue.  
 AB The pyrazines I [R = CMe(CO<sub>2</sub>Et)<sub>2</sub>, CHMeCO<sub>2</sub>H, CMe<sub>2</sub>CO<sub>2</sub>Et, CHMeCONH<sub>2</sub>; R<sub>1</sub> = H, Ph, R<sub>2</sub> = Ph, p-ClC<sub>6</sub>H<sub>4</sub>] were prepared. Thus, PhCOCHO was cyclized with H<sub>2</sub>NCH<sub>2</sub>CHO and the I (R = OH, R<sub>1</sub> = H, R<sub>2</sub> = Ph) treated with POC13 and condensed with (EtO<sub>2</sub>C)<sub>2</sub>CMeH in NaH to give I [R = CMe(CO<sub>2</sub>Et)<sub>2</sub>] which was hydrolyzed, decarboxylated and aminated to give I (R = CHMeCONH<sub>2</sub>, R<sub>1</sub> = H, R<sub>2</sub> = Ph). At 0.01-5% I were useful as sun-screening materials in salves and ointments.  
 IT 36932-92-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and amination of)  
 RN 36932-92-0 CAPLUS  
 CN Pyrazineacetic acid, α-methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



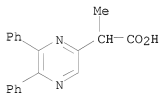
IT 36932-91-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and decarboxylation of)  
 RN 36932-91-9 CAPLUS  
 CN Propanedioic acid, (5,6-diphenylpyrazinyl)methyl-, diethyl ester (9CI) (CA INDEX NAME)



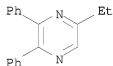
IT 36932-93-1P 36932-94-2P 36932-95-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 36932-93-1 CAPLUS  
 CN Pyrazineacetamide,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 36932-94-2 CAPLUS  
 CN Pyrazineacetic acid,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 36932-95-3 CAPLUS  
 CN Pyrazine, 5-ethyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



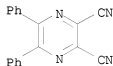
L14 ANSWER 295 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1975:606310 CAPLUS  
 DOCUMENT NUMBER: 83:206310  
 ORIGINAL REFERENCE NO.: 83:32479a,32482a  
 TITLE: 5,8-Diaminopyrazino[2,3-d]pyridazines and analogous  
 fused pyridazines  
 INVENTOR(S): Kawamoto, Nobuo; Okubo, Atsuo; Yamazaki, Hideo;  
 Akihiro, Kazuo; Nitani, Kiyooki  
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF



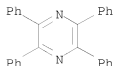
DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 50052090	A	19750509	JP 1973-102626	19730913
PRIORITY APPLN. INFO.:				JP 1973-102626	A 19730913

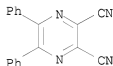
GI For diagram(s), see printed CA Issue.  
 AB Fused pyridazines I (X = NHCR:N, NHN:N, SCH2CHRS, N:CR1CR1:N, NHCONH, NHCOCONH; R = H, Cl-4-alkyl, Ph; R1 = Me, Ph) are prepared by treating dinitriles II with N2H4. I are agricultural fungicides. Thus, 16.9 g 5,6-dicyano-2,3-diphenylpyrazine was refluxed with 3.5 g N2H4.H2O in dioxane-EtOH 1 hr to give 2.9 g I (X = N:CPhCPh:N). Also prepared were I (X = N:CMcMe:N, NHN:N, NHCH:N, SCH2CH2S).  
 IT 52197-23-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (cyclization of, with hydrazine, diaminoheteroazopyridazines from)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



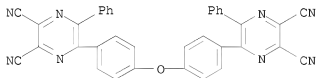
L14 ANSWER 296 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1975:547459 CAPLUS  
 DOCUMENT NUMBER: 83:147459  
 ORIGINAL REFERENCE NO.: 83:23167a,23170a  
 TITLE: Condensation of meso-1,2-diphenylethylenediamine with alkyl- and arylmalonyl chlorides  
 AUTHOR(S): Biniecki, Stanislaw; Moll, Maria  
 CORPORATE SOURCE: Dep. Chem. Technol. Pharm. Prod., Sch. Med., Warsaw, Pol.  
 SOURCE: Acta Poloniae Pharmaceutica (1975), 32(1), 1-5  
 CODEN: APHAX; ISSN: 0001-6837  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Polish  
 OTHER SOURCE(S): CASREACT 83:147459  
 GI For diagram(s), see printed CA Issue.  
 AB 1,4-Diazacycloheptane-5,7-dione derivs. (I, R, R1 = Et, Et; Et, Ph; Ph, Ph) were prepared in 9-25% yields by condensing PhCH(NH2)CH(NH2)Ph with Et2C(COCl)2, EtPhC(COCl)2, and Ph2C(COCl)2, resp., in C6H6 or PhMe.  
 IT 642-04-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 297 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1975:477905 CAPLUS  
 DOCUMENT NUMBER: 83:77905  
 ORIGINAL REFERENCE NO.: 83:12235a,12238a  
 TITLE: Mass spectra of heteroaromatic nitriles  
 AUTHOR(S): Holzmann, G.; Rothkopf, H. W.; Mueller, R.; Woehrlé, D.  
 CORPORATE SOURCE: Inst. Org. Chem., Freie Univ. Berlin, Berlin, Fed. Rep. Ger.  
 SOURCE: Organic Mass Spectrometry (1975), 10(2), 97-115  
 CODEN: ORMSBG; ISSN: 0030-493X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 AB The fragmentation mechanisms of 19 di- and tetracyanopyrazines were studied by electron-impact and field ionization mass spectroscopy, using high resolution and metastable anal. In the 5,6-dialkyl- and diaryl-2,3-dicyanopyrazines ring cleavage was most important, with minor loss of the CN groups. Annulation in the 5,6-positions led to loss of CN and (CN)<sub>2</sub> with no ring cleavage. Similar fragmentations were observed for the tetracyano analogs. Comparison of the spectra with those of 5-membered heterocycles containing 4 CN groups showed that CN loss depended on the aromaticity of the ring system.  
 IT 52197-23-6 55408-55-4  
 RL: PRP (Properties)  
 (mass spectrum of)  
 RN 52197-23-6 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)

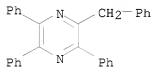


RN 55408-55-4 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,5'-(oxydi-4,1-phenylene)bis[6-phenyl- (9CI)  
 (CA INDEX NAME)

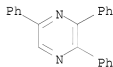


L14 ANSWER 298 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1975:443267 CAPLUS  
 DOCUMENT NUMBER: 83:43267  
 ORIGINAL REFERENCE NO.: 83:6847a,6850a  
 TITLE: Synthesis of and base-induced rearrangements in the 1,4-diazabicyclo[4.1.0]hept-4-ene system  
 AUTHOR(S): Padwa, Albert; Gehrlein, Lane; Kinnel, Robin B.  
 CORPORATE SOURCE: Dep. Chem., State Univ. New York, Buffalo, NY, USA  
 SOURCE: Journal of Organic Chemistry (1975), 40(12), 1683-8  
 CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB Four stereoisomers of 2,3,5,7-tetraphenyl-1,4-diazabicyclo[4.1.0]hept-4-ene I were prepared and underwent base induced rearrangements. I were prepared from the reaction of meso- and rac-stilbenediamine with PhCHBrCBrCOPh. The assignment of stereochemistry about the ring system was made on the basis of the NMR spectra of the various structural isomers. The product formed from I and base depended on both the initial stereochem. of the ring system as well as on the exptl. conditions used. The exo,exo-I gave 1-benzyl-2,3,5-triphenyldihydropyrazine, on treatment with Me3COK. The other isomers of I gave triphenylpyrazine when C6H6 was used as a solvent. When the reaction was carried out in Me3COH, 2-benzyl-3,5,6-triphenylpyrazine, 2,3,5,7-tetraphenyl-1,4-diazacyclohepta-1,3,5-triene, and 2,4,5,7-tetraphenyl-3,6-diazabicyclo[3.2.0]hepta-3,6-diene were isolated as the major products.  
 IT 54964-40-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 54964-40-8 CAPLUS  
 CN Pyrazine, triphenyl(phenylmethyl)- (9CI) (CA INDEX NAME)



IT 36476-77-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with benzyl lithium)  
 RN 36476-77-4 CAPLUS  
 CN Pyrazine, 2,3,5-triphenyl- (CA INDEX NAME)



L14 ANSWER 299 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1975:175189 CAPLUS  
 DOCUMENT NUMBER: 82:175189  
 ORIGINAL REFERENCE NO.: 82:27987a,27990a  
 TITLE: Identification of impurities in a novel  
 antiinflammatory oxazole derivative  
 AUTHOR(S): Goldsmith, J. A.; Hallett, J.  
 CORPORATE SOURCE: John Wyeth and Brother Ltd., Taplow/Maidenhead/Berks.,  
 UK  
 SOURCE: Proceedings of the Society for Analytical Chemistry  
 (1972), 9(2), 32-5  
 CODEN: PAYCAL; ISSN: 0037-9697  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB Of 7 possible impurities occurring during the synthesis of  
 4,5-diphenyl-2-oxazolepropionic acid (I) [21256-18-8], 5 were obtained

from reaction mixts. or from crude or degraded I and were therefore considered likely impurities. Four of these were detected in batches of I. The use of both thin-layer and gas chromatog., in combination with assay results, could be used to monitor purity during I synthesis.

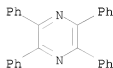
IT 642-04-6

RL: ANT (Analyte); ANST (Analytical study)

(chromatog. of, as diphenyloxazolepropionic acid preparation impurity)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 300 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1975:156218 CAPLUS

DOCUMENT NUMBER: 82:156218

ORIGINAL REFERENCE NO.: 82:24936h,24937a

TITLE: Di- and tetracyanopyrazines

AUTHOR(S): Rothkopf, Hans W.; Woehrl, Dieter; Mueller, Reinhardt; Kossmehl, Gerhard

CORPORATE SOURCE: Inst. Org. Chem., Freie Univ. Berlin, Berlin, Fed. Rep. Ger.

SOURCE: Chemische Berichte (1975), 108(3), 875-86

CODEN: CHBEAM; ISSN: 0009-2940

DOCUMENT TYPE: Journal

LANGUAGE: German

OTHER SOURCE(S): CASREACT 82:156218

GI For diagram(s), see printed CA Issue.

AB Diaminomaleonitrile reacts with di- and tetraketones and oxoaldehydes

RCOCOR1 (I, R = H, Me, Ph; R1 = H, Me, Ph) to give cyanopyrazines II.

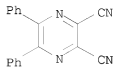
When I is 9,10-phenanthrenequinone, III is formed. Other I, such as 1,8-phenanthroline-9,10-quinone, N-acetylisatin, 4,5:9,10-pyrenediquinone, etc., were also used to give polycyclic II. RC(:NOH)COR1 (R = H, Me; R1 = Ph) could be used instead of I. [HN:C(CN)]2 cyclizes with di- and tetramines 4,5-RR1C6H2(NH2)2-1,2 to give 2,3-dicyanoquinoxalines IV (R = H, Me, NO2, CO2H; R1 = H, Me), V, and VI. Some dicyanopyrazines cyclize with NH3 to give aminoimino-5H-pyrrolo[3,4-b]pyrazines VII (R = Me, Ph; R1 = H, Me; RR1 = CH:CHCH:CH).

IT 52197-23-6P 55408-55-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

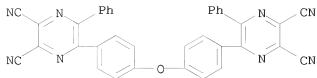
RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 55408-55-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,5'-(oxydi-4,1-phenylene)bis[6-phenyl- (9CI)  
(CA INDEX NAME)



L14 ANSWER 301 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1975:58411 CAPLUS  
 DOCUMENT NUMBER: 82:58411  
 ORIGINAL REFERENCE NO.: 82:9355a,9358a  
 TITLE: Thermooxidative degradation of polyquinoxalines and related model compounds  
 AUTHOR(S): Kane, James J.; Ghosh, Subrata; Conley, Robert I.  
 CORPORATE SOURCE: Dep. Chem., Wright State Univ., Dayton, OH, USA  
 SOURCE: Papers presented at [the] Meeting - American Chemical Society, Division of Organic Coatings and Plastics Chemistry (1973), 33(1), 466-73  
 CODEN: ACOCAO; ISSN: 0096-512X

DOCUMENT TYPE:

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

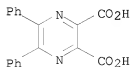
AB Solution oxidation by aqueous alkaline permanganate of model compds. for the poly(etherquinoxaline) (I) [52885-62-8] showed that the carbocyclic ring adjacent to the heterocyclic pyrazine ring was more susceptible to oxidation 2-Phenylquinoxaline [5021-43-2] gave 2-phenylpyrazine-5,6-dicarboxylic acid [39784-64-0], and similarly, 2,3-diphenylpyrazine-5,6-dicarboxylic acid [53954-53-3] was prepared from 2,3-diphenylquinoxaline [1684-14-6], 2,2',3,3'-tetraphenyl-6,6'-biquinoxaline [16111-01-6], 2,2',3,3'-tetraphenyl-6,6'-oxydiquinoxaline [16478-99-2], and 2,3-diphenylbenzo[gl]quinoxaline [36305-72-3]. Pyrolytic oxidation of phenylquinoxalines gave products similar to those obtained from benzimides, suggesting that benzheterocyclic systems underwent oxidative degradation by similar mechanisms, with initial oxygenation of the carbocyclic ring adjacent to the heterocyclic one. Catalytic oxidation of the quinoxaline system involved oxygenated intermediates similar to pyrazine dicarboxylic acids. Nitrile absorptions were observed in ir spectra of oxidative pyrolysis products of I films.

IT 53954-53-3P

RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, on oxidation of phenylquinoxalines)

RN 53954-53-3 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 302 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1975:43773 CAPLUS  
 DOCUMENT NUMBER: 82:43773  
 ORIGINAL REFERENCE NO.: 82:6977a,6980a  
 TITLE: Heat resistant polymers and solubilization  
 AUTHOR(S): Higgins, Jerry

CORPORATE SOURCE: Dep. Chem., Illinois State Univ., Normal, IL, USA  
 SOURCE: Papers presented at [the] Meeting - American Chemical Society, Division of Organic Coatings and Plastics Chemistry (1973), 33(1), 241-9  
 CODEN: ACOCAO; ISSN: 0096-512X

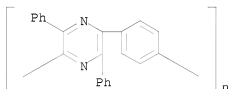
DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The heat-resistant heterocyclic polymers (such as poly(2,4-pyrazinediyl-1,4-phenylene) [25482-93-3], benzene-1,2,4,5-tetraamine-benzo[1,2-b:5,4-b'] dipyrrole-2,3,5,6-tetrone copolymer [35560-14-6], etc.) were prepared, and their solubilization in acids containing H2O2 studied.

IT 31347-80-5  
 RL: PROC (Process)  
 (solubilization of, in acids containing hydrogen peroxide)

RN 31347-80-5 CAPLUS

CN Poly[(3,6-diphenyl-2,5-pyrazinediyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



L14 ANSWER 303 OF 399 CAPLUS COPYRIGHT 2007 ACS ON STN

ACCESSION NUMBER: 1974:402947 CAPLUS

DOCUMENT NUMBER: 81:2947

ORIGINAL REFERENCE NO.: 81:475a,478a

TITLE: Preparation of tetraarylpyrroles and comparative EPR g-factor investigation of pyrrolyl radicals and tetracyclone ketys

AUTHOR(S): Broser, W.; Kurreck, H.; Rennoch, D.; Reusch, J.

CORPORATE SOURCE: Inst. Org. Chem., Freie Univ. Berlin, Berlin, Fed. Rep. Ger.

SOURCE: Tetrahedron (1973), 29(23), 3959-71  
 CODEN: TETRAB; ISSN: 0040-4020

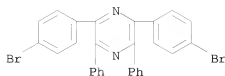
DOCUMENT TYPE: Journal  
 LANGUAGE: German

AB Thirty-six halo-substituted tetraphenylpyrroles were prepared by condensation of benzoins with deoxybenzoins and NH4OAc. The electronic g-factors of the corresponding pyrrolyl radicals were determined by EPR techniques in solution. A linear relation was found between the type and number of the substituents and the g-factor shift. Assuming twist angles of 25° and 60° for the α- and β-phenyl rings, resp., with respect to the plane of the 5-membered ring, the EPR data was explained by Hueckel-MO-McLahen calcns. The twist angles in the analogous tetracyclone-ketyl system were 65° and 20° for the α- and β-phenyl rings, resp. The different conformations of the 2 systems were explained by different charge distributions.

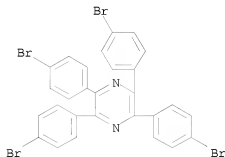
IT 52889-49-3P 52889-50-6P 53006-53-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

RN 52889-49-3 CAPLUS

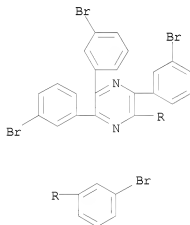
CN Pyrazine, 2,6-bis(4-bromophenyl)-3,5-diphenyl- (9CI) (CA INDEX NAME)



RN 52889-50-6 CAPLUS  
 CN Pyrazine, tetrakis(4-bromophenyl)- (9CI) (CA INDEX NAME)



RN 53006-53-4 CAPLUS  
 CN Pyrazine, tetrakis(3-bromophenyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 304 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1974:120864 CAPLUS  
 DOCUMENT NUMBER: 80:120864  
 ORIGINAL REFERENCE NO.: 80:19455a,19458a  
 TITLE: Synthesis of potential antineoplastic agents. XXIV.  
 Reaction of diaminomaleonitrile with 1,2-diones  
 Popp, Frank D.  
 AUTHOR(S):  
 CORPORATE SOURCE: Dep. Chem., Clarkson Coll. Technol., Potsdam, NY, USA  
 SOURCE: Journal of Heterocyclic Chemistry (1974), 11(1), 79-82  
 CODEN: JHTCAD; ISSN: 0022-152X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB Diaminomaleonitrile (I) was cyclocondensed with 1,2-diones RCOCOR1 to

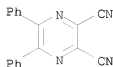
yield dicyanipyrazine derivs. (II). I with glyoxal gave  
 $\text{H}_2\text{NC}(\text{CN})\text{:C}(\text{CN})\text{N:CH}_2$  which cyclized to II ( $\text{R} = \text{R}_1 = \text{H}$ ).  
 1,2-Cyclohexanedione and I gave III. I with  $\text{Ac}_2\text{CH}_2$  gave IV and with  
 indandione gave V. Other examples are described.

IT 52197-23-6

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with hydrazine)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)

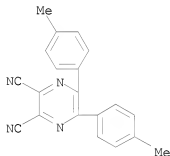


IT 52197-13-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

RN 52197-13-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 305 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1974:96020 CAPLUS  
 DOCUMENT NUMBER: 80:96020  
 ORIGINAL REFERENCE NO.: 80:15451a,15454a  
 TITLE: Pyrazinylacetates  
 PATENT ASSIGNEE(S): McNeil Laboratories, Inc.  
 SOURCE: Fr. Demande, 40 pp.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2173868	A1	19731012	FR 1972-10461	19720324
FR 2173868	B1	19750620		

PRIORITY APPLN. INFO.: FR 1972-10461 A 19720324

GI For diagram(s), see printed CA Issue.

AB Pyrazinylacetates I ( $\text{R} = \text{H}$ ,  $\text{R}_1 = \text{OEt}$ ,  $\text{OH}$ ,  $\text{NH}_2$ ;  $\text{R} = \text{CO}_2\text{Et}$ ,  $\text{R}_1 = \text{OEt}$ ,  $\text{R}_2 = \text{H}$ ,  $\text{Ph}$ ,  $p\text{-ClC}_6\text{H}_4$ ,  $\text{R}_3 = \text{H}$ ,  $\text{R}_2 = \text{R}_3 = \text{Ph}$ ) and some related compds. were prepared Thus  $\text{PhCOCHO}$  was cyclized with  $\text{H}_2\text{NCH}_2\text{CONH}_2$ , the



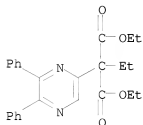
5-phenyl-2-pyrazinol treated with POC13, and the 2-chloro-5-phenylpyrazine treated with MeCH(CO2Et)2 to give I (R = CO2Et, R1 = OEt, R2 = Ph, R3 = H), which was decarboxylated to I (R = R3 = H, R1 = OEt, R2 = Ph), hydrolyzed to the acid, or treated with NH4OH to give the amide. I are uv absorbers for plastics or sun-protective compns. and inflammation inhibitors comparable to phenylbutazone.

IT 52631-62-6

RL: RCT (Reactant); RACT (Reactant or reagent)  
(decarboxylation of)

RN 52631-62-6 CAPLUS

CN Propanedioic acid, (5,6-diphenylpyrazinyl)ethyl-, diethyl ester (9CI) (CA INDEX NAME)

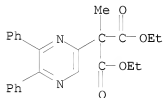


IT 36932-91-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and decarboxylation of)

RN 36932-91-9 CAPLUS

CN Propanedioic acid, (5,6-diphenylpyrazinyl)methyl-, diethyl ester (9CI) (CA INDEX NAME)



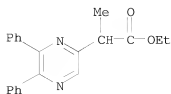
IT 36932-92-0P 36932-93-1P 36932-94-2P

36932-95-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

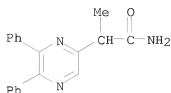
RN 36932-92-0 CAPLUS

CN Pyrazineacetic acid, α-methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



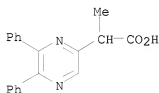
RN 36932-93-1 CAPLUS

CN Pyrazineacetamide,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



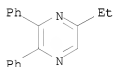
RN 36932-94-2 CAPLUS

CN Pyrazineacetic acid,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 36932-95-3 CAPLUS

CN Pyrazine, 5-ethyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 306 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1974:3552 CAPLUS

DOCUMENT NUMBER: 80:3552

ORIGINAL REFERENCE NO.: 80:623a,626a

TITLE: Pyrazinederivatives and their use as uv-absorbers in pharmaceutical compositions

INVENTOR(S): Schwartz, Norman; Mohrbacher, Richard

PATENT ASSIGNEE(S): McNeil Laboratories Inc.

SOURCE: Ger. Offen., 48 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2215117	A1	19731004	DE 1972-2215117	19720328
PRIORITY APPLN. INFO.:			DE 1972-2215117	A 19720328

GI For diagram(s), see printed CA Issue.

AB Pyrazineacetates I (R = CO<sub>2</sub>Et, CO<sub>2</sub>H, CONH<sub>2</sub>, CONHCH<sub>2</sub>Ph, morpholinocarbonyl, CO<sub>2</sub>Na, H; R<sub>1</sub> = CO<sub>2</sub>Et, CO<sub>2</sub>Na, H, Me; R<sub>2</sub> = H, Ph, p-ClC<sub>6</sub>H<sub>4</sub>; R<sub>3</sub> = H, Ph) were prepared for use as uv absorbers in plastics and sunscreen compns. and as antiphlogistics. Thus, PhCOCH(OH)<sub>2</sub> was cyclized with H<sub>2</sub>NCH<sub>2</sub>CONH<sub>2</sub>.HCl to 5-phenylpyrazinol, which was chlorinated to 2-chloro-5-phenylpyrazine and

treated with MeCH(CO<sub>2</sub>Et)<sub>2</sub> to give I (R = R<sub>1</sub> = CO<sub>2</sub>Et, R<sub>2</sub> = Ph, R<sub>3</sub> = H). At 100 mg/kg orally, the latter compound gave 50% inhibition of rat paw edema, compared with 47% inhibition obtained by the same dose of phenylbutazone.

IT 36932-91-9P 36932-92-0P 36932-93-1P

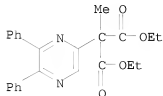
36932-94-2P 36932-95-3P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of)

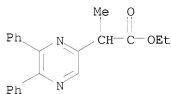
RN 36932-91-9 CAPLUS

CN Propanedioic acid, (5,6-diphenylpyrazinyl)methyl-, diethyl ester (9CI)  
(CA INDEX NAME)



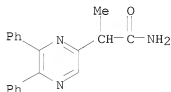
RN 36932-92-0 CAPLUS

CN Pyrazineacetic acid,  $\alpha$ -methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



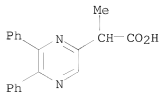
RN 36932-93-1 CAPLUS

CN Pyrazineacetamide,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



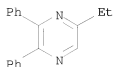
RN 36932-94-2 CAPLUS

CN Pyrazineacetic acid,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 36932-95-3 CAPLUS

CN Pyrazine, 5-ethyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 307 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1973:491853 CAPLUS

DOCUMENT NUMBER: 79:91853

ORIGINAL REFERENCE NO.: 79:14911a,14914a

TITLE: Thermal reactions with 3-phenyl-2H-azirines.

AUTHOR(S): 1,3-Dipolar cycloadditions and ene reactions  
Narasimhan, Nurani S.; Heimgartner, Heinz; Hansen,  
Hans Juergen; Schmid, Hans

CORPORATE SOURCE: Org.-Chem. Inst., Univ. Zurich, Zurich, Switz.

SOURCE: Helvetica Chimica Acta (1973), 56(4), 1351-70

CODEN: HCACAV; ISSN: 0018-019X

DOCUMENT TYPE: Journal

LANGUAGE: German

GI For diagram(s), see printed CA Issue.

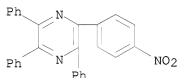
AB Azirines I (R = Ph, H) underwent 1,3-dipolar cycloaddn. with  
PhCCl:NCH2C6H4NO2-p in the absence of heat, light, and O to give II-IV. V  
(R = Ph) was also obtained from I (R = Ph), but no V (R = H) was observed II  
were the initial products and were partially converted to III, from which  
IV were formed during work-up. On heating with 2,4-diphenyl-2-oxazolin-5-  
one, I attached to the 4-position of the oxazoline. Heating I (R = Ph)  
with dimedone yielded 6,6-dimethyl-4-oxo-1,3-diphenyl-4,5,6,7-  
tetrahydroisindole, whereas I (R = H) gave 6,6-dimethyl-4-oxo-3-phenyl-  
4,5,6,7-tetrahydroisindole.

IT 43153-92-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 43153-92-0 CAPLUS

CN Pyrazine, (4-nitrophenyl)triphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 308 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1973:135214 CAPLUS

DOCUMENT NUMBER: 78:135214

ORIGINAL REFERENCE NO.: 78:21721a,21724a

TITLE: Photochemical transformations of small ring  
heterocyclic compounds. XLVII. Electronic details of  
the photocycloaddition of arylazirines

AUTHOR(S): Padwa, Albert; Dharan, Murali; Smolanoff, Joel;  
Wetmore, S. I., Jr.

CORPORATE SOURCE: Dep. Chem., State Univ. New York, Buffalo, NY, USA

SOURCE: Journal of the American Chemical Society (1973),  
95(6), 1954-61

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE:

Journal

LANGUAGE:

English

GI For diagram(s), see printed CA Issue.

AB Mechanistic studies on the photocycloaddn. and photodimerization of arylazirines are reported. Irradiation of a number of substituted arylazirines in an inert solvent gives 1,3-diazabicyclo[3.1.0]hex-3-enes as primary photoproducts. The formation of these dimers can be rationalized by 1,3-dipolar addition of the initially generated nitrile ylide onto the arylazirine. In the presence of a good dipolarophile, the nitrile ylide is trapped to give a  $\Delta^1$ -pyrroline adduct. Support for this conclusion was obtained by a study of the variation of the quantum yield for adduct formation as a function of the concentration of added dipolarophile. The amount of adduct formed is dependent on the initial concentration of azirine

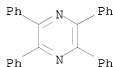
and on the activity of the dipolarophile. The structure of the dimer obtained from 2-phenylazirine was previously assigned as 4-phenyl-3-phenylimino-1-azabicyclo[2.1.0]pentane. This structure is now shown to be 4,5-diphenyl-1,3-diazabicyclo[3.1.0]hex-3-ene (I). Kinetic studies show that the nitrile ylide generated by the photolysis of an arylazirine is an electronically relaxed species.

IT 642-04-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 309 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1973:124176 CAPLUS

DOCUMENT NUMBER: 78:124176

ORIGINAL REFERENCE NO.: 78:19947a,19950a

TITLE: Photodecarbonylation of  $\beta$ -styryl isocyanates

AUTHOR(S): Boyer, J. H.; Mikol, G. J.

CORPORATE SOURCE: Chem. Dep., Univ. Illinois, Chicago, IL, USA

SOURCE: Journal of Heterocyclic Chemistry (1972), 9(6), 1325-30

CODEN: JHTCAD; ISSN: 0022-152X

DOCUMENT TYPE:

Journal

LANGUAGE:

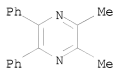
English

GI For diagram(s), see printed CA Issue.

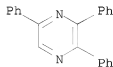
AB Ph-CH:CRNCO (I, R = H, Me, Ph) underwent both extensive polymerization and the loss of CO upon irradiation at 254 nm in cyclohexane. The formation of 2,5-diphenylpyrazine and indole (II R = H) from I (R = H) and 2,3-dimethyl-5,6-diphenylpyrazine and I (R = Me) provided diagnostic evidence for styryl nitrene intermediates. The formation of PhCHRCN (R = H, Me) was assigned to an initial rearrangement of the residue, C<sub>8</sub>H<sub>6</sub>(R)N: into a ketenimine concerned with the elimination of CO from I. Isomerization then produced a nitrile. I (R = Ph) gave no product requiring the intermediacy of a nitrene and (or) an azirine. The formation of 2,3,4,5-tetraphenylpyrrole was assigned to a dimerization of the isocyanate concerted with or following the elimination of CO and HCN, and the formation of 3-phenylisocarbostyryl was assigned to a ring-closure of the isocyanate in an excited triplet state. Each isocyanate gave

stilbene and trace amounts of oxidative fragmentation into PhCHO and benzonitrile. Solvent participation produced benzyliccyclohexane and bicyclohexyl. Two unidentified solids, C17H14N2O and C12H14N2O, were obtained from I (R = Me).

IT 36697-41-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 36697-41-3 CAPLUS  
CN Pyrazine, 2,3-dimethyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 310 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1973:96865 CAPLUS  
DOCUMENT NUMBER: 78:96865  
ORIGINAL REFERENCE NO.: 78:15535a,15538a  
TITLE: Photochemical transformations of small ring heterocyclic compounds. XLII. 1,3-Dipolar cycloaddition reactions of the azomethine ylide derived from the 1,3-diazabicyclo[3.1.0]hex-3-ene system  
AUTHOR(S): Padwa, Albert; Glazer, Edward  
CORPORATE SOURCE: Dep. Chem., State Univ. New York, Buffalo, NY, USA  
SOURCE: Journal of Organic Chemistry (1973), 38(2), 284-8  
CODEN: JOCEAH; ISSN: 0022-3263  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB endo-2,4,6-Triphenyl-1,3-diazabicyclo[3.1.0]hex-3-ene reacts stereospecifically with di-Me maleate and di-Me fumarate in refluxing xylene or on irradiation to give 2-pyrrolines as cycloadducts. The base-catalyzed epimerization of the various adducts supports the stereochem. structure assignments. A likely mechanism for these addns. is the conversion of the diazabicyclo system into an azomethine ylide which subsequently reacts with the unsatd. substrate. The photochem. results imply that the opening of the aziridine ring proceeds by a conrotatory motion in contrast to the disrotatory motion predicted from orbital symmetry considerations. Three possible explanations of these results are presented.  
IT 36476-77-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 36476-77-4 CAPLUS  
CN Pyrazine, 2,3,5-triphenyl- (CA INDEX NAME)



L14 ANSWER 311 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1973:83579 CAPLUS

DOCUMENT NUMBER: 78:83579  
 ORIGINAL REFERENCE NO.: 78:13329a,13332a  
 TITLE: Photochemical transformations of small ring heterocyclic compounds. XLIII. Photochemical reorganizations in the 1,3-diazabicyclo[3.1.0]hex-3-ene system  
 AUTHOR(S): Padwa, Albert; Glazer, Edward  
 CORPORATE SOURCE: Dep. Chem., State Univ. New York, Buffalo, NY, USA  
 SOURCE: Journal of the American Chemical Society (1972), 94(22), 7788-97  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

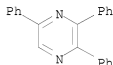
GI For diagram(s), see printed CA Issue.

AB The irradiation of a triaryl-substituted 1,3-diazabicyclo[3.1.0]hex-3-ene in benzene results in ring opening to an enediimine (I) intermediate which undergoes subsequent thermal disrotatory closure to a cis-dihydropyrazine. The same enediimine intermediate is formed on irradiation of a cis- or trans-dihydropyrazine. A variation of the normal reaction pathway occurs when the irradiation is carried out in an alc. medium. Photolysis of endo- or exo-2,4,6-triphenyl-1,3-diazabicyclo[3.1.0]hex-3-ene (exo-II) in MeOH gives 2,4-diphenyl-1-methoxybenzylimidazoline (III). The photoreaction proceeds via an azomethine ylide forms by cleavage of the aziridine C-C bond. The azomethine ylide leads to III by addition of MeOH. Irradiation of exo- or endo-II in an EtOH glass produces a bright red color which is rapidly discharged by the addition of di-Me acetylenedicarboxylate. The azomethine ylide ring opens to form I in the absence of MeOH.

IT 36476-77-4P 40208-66-0P 40208-70-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

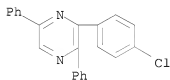
RN 36476-77-4 CAPLUS

CN Pyrazine, 2,3,5-triphenyl- (CA INDEX NAME)



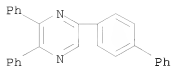
RN 40208-66-0 CAPLUS

CN Pyrazine, 3-(4-chlorophenyl)-2,5-diphenyl- (9CI) (CA INDEX NAME)

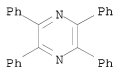


RN 40208-70-6 CAPLUS

CN Pyrazine, 5-[1,1'-biphenyl]-4-yl-2,3-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 312 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1972:525032 CAPLUS  
 DOCUMENT NUMBER: 77:125032  
 ORIGINAL REFERENCE NO.: 77:20617a,20620a  
 TITLE: Mechanistic study of alkylpyrazine formation in model systems  
 AUTHOR(S): Rizz, George P.  
 CORPORATE SOURCE: Miami Val. Lab., Procter and Gamble Co., Cincinnati, OH, USA  
 SOURCE: Journal of Agricultural and Food Chemistry (1972), 20(5), 1081-5  
 CODEN: JAFCAU; ISSN: 0021-8561  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Several  $\alpha$ -dicarbonyl compds. were reacted with  $\alpha$ -amino acids in an attempt to validate the hypothesis that alkylpyrazines are formed from similar precursors during the roasting of foods.  $\alpha$ -Diketones yielded the expected pyrazines, but pyruvaldehyde produced trimethylpyrazine in addition to isomeric dimethylpyrazines. Aminoacetone, a probable reaction intermediate in the later reaction, spontaneously condensed with itself to form 2,5-dimethyl-, trimethyl-, and 2,5-dimethyl-3-ethylpyrazine.  
 IT 642-04-6  
 RL: BIOL (Biological study)  
 (alanine-benzil reaction products)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 313 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1972:434067 CAPLUS  
 DOCUMENT NUMBER: 77:34067  
 ORIGINAL REFERENCE NO.: 77:5667a,5670a  
 TITLE: Photo-induced decarbonylation of  $\beta$ -styryl isocyanates  
 AUTHOR(S): Mikol, G. J.; Boyer, J. H.  
 CORPORATE SOURCE: Dep. Chem., Univ. Ill., Chicago, IL, USA  
 SOURCE: Journal of the Chemical Society, Chemical Communications (1972), (8), 439  
 CODEN: JCCCAT; ISSN: 0022-4936  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB Irradiation of  $\beta$ -styryl isocyanates released the elements of CO and gave products formally derived from rearrangement and dimerization of the



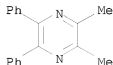
residue. E.g., PhCH:CMenCO gave I formally through "head-to-head" dimerization of PhCH:CMen or 3-methyl-2-phenyl-2H-azirine.

IT 36697-41-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 36697-41-3 CAPLUS

CN Pyrazine, 2,3-dimethyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 314 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1972:419458 CAPLUS

DOCUMENT NUMBER: 77:19458

ORIGINAL REFERENCE NO.: 77:3257a,3260a

TITLE: Photoreactions. 18. Photodimerization of  
3-phenyl-2H-azirines

AUTHOR(S): Gakis, N.; Maerky, M.; Hansen, H. J.; Schmid, H.

CORPORATE SOURCE: Org.-Chem. Inst., Univ. Zurich, Zurich, Switz.

SOURCE: Helvetica Chimica Acta (1972), 55(3), 748-52

CODEN: HCACAV; ISSN: 0018-019X

DOCUMENT TYPE: Journal

LANGUAGE: German

GI For diagram(s), see printed CA Issue.

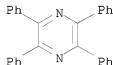
AB Irradiation of 3-phenyl-2H-azirine in benzene with a high-pressure mercury lamp gave 4,5-diphenyl-1,3-diazabicyclo [3.1.0.] hex-3-ene (I) and not 3-phenylimino-4-phenyl-1-azabicyclo [2.1.0] pentane. Irradiation of 2-methyl-3-phenyl-2H-azirine gave a 2:1 mixture of 2-exo, 6-exo-and 2-endo, 6-exo-dimethyl-4,5-diphenyl-1,3-diazabicyclo [3.1.0]-hex-3-ene and 2,3-diphenyl-2H-azirine gave 2,4,5-triphenyl-imidazole and tetraphenylpyrazine. The mechanism for formation of the last 2 compds. was discussed.

IT 642-04-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 315 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1972:406028 CAPLUS

DOCUMENT NUMBER: 77:6028

ORIGINAL REFERENCE NO.: 77:1062h,1063a

TITLE: Film- and fiber-forming poly(aromatic pyrazines)

INVENTOR(S): Higgins, Jerry G.

PATENT ASSIGNEE(S): Research Corp.

SOURCE: U.S., 3 pp.

DOCUMENT TYPE: CODEN: USXXAM  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: English  
 PATENT INFORMATION: 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3644285	A	19720222	US 1970-80154	19701012
CA 952642	A1	19740806	CA 1971-115116	19710608
			US 1970-80154	A 19701012

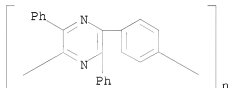
PRIORITY APPLN. INFO.:

AB High-temperature stable aromatic pyrazine polymers were prepared by by condensation of bis( $\alpha$ -halo) aromatic ketones with  $\text{NH}_3$ . In an example, 1,4-bis( $\alpha$ -bromoacetyl)benzene [946-03-2] (prepared by bromination of 1,4-diacetylbenzene) was added to  $\text{AcNMe}_2$  saturated with  $\text{NH}_3$  and stirred 1 hr at 50-60.deg. and 20 hr at reflux to give poly[2,5-(1,4-phenylene)pyrazine (I) [25482-93-3]; I was stable .geq.400.deg. both in air and in  $\text{N}_2$ . Heating I in the presence of peroxides increased the solubility in DMF and  $\text{AcNMe}_2$ .

IT 31347-80-5  
 RL: PRP (Properties)  
 (heat resistance of)

RN 31347-80-5 CAPLUS

CN Poly[(3,6-diphenyl-2,5-pyrazinediyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



L14 ANSWER 316 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1972:405527 CAPLUS  
 DOCUMENT NUMBER: 77:5527  
 ORIGINAL REFERENCE NO.: 77:975a,978a  
 TITLE: Ultraviolet light-absorbing derivatives of pyrazinylmalonates and pyrazineacetic acids  
 PATENT ASSIGNEE(S): McNeil Laboratories, Inc.  
 SOURCE: Brit., 20 pp.  
 CODEN: BRXXAA  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 5  
 PATENT INFORMATION:

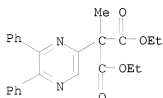
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1268916	A	19720329	GB 1969-1268916	19691107
US 3761477	A	19730925	US 1968-774486	19681108
US 3865826	A	19750211	US 1972-307685	19721117
			US 1968-774486	A 19681108

PRIORITY APPLN. INFO.:

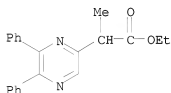
GI For diagram(s), see printed CA Issue.

AB PhCOCHO.H<sub>2</sub>O was treated with  $\text{H}_2\text{NCH}_2\text{CONH}_2$  and  $\text{NaOH}$  and the resulting pyrazinone treated with  $\text{POCl}_3$  to give 5-phenyl-2-chloropyrazine, which was treated with  $\text{EtO}_2\text{CCHMeCO}_2\text{Et}$  and  $\text{NaH}$  to give the pyrazine (I,  $\text{R} = \text{OEt}$ ,  $\text{R}_1 = \text{CO}_2\text{Et}$ ,  $\text{R}_2 = \text{Me}$ ,  $\text{R}_3 = \text{Ph}$ ,  $\text{R}_4 = \text{H}$ ) (II). About 10 I ( $\text{R} = \text{OEt}$ ,  $\text{OH}$ ,  $\text{NH}_2$ ;  $\text{R}_1 = \text{H}$ ,  $\text{CO}_2\text{Et}$ ;  $\text{R}_2 = \text{H}$ ,  $\text{Me}$ ;  $\text{R}_3 = \text{H}$ ,  $\text{Ph}$ ,  $p\text{-ClC}_6\text{H}_4$ ,  $\text{Et}$ ;  $\text{R}_4 = \text{H}$ ,  $\text{Ph}$ ) were similarly prepared At 100 mg/kg, II reduced kaolin-induced edema in rat paws by 50%

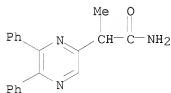
(phenylbutazone was 47%). Uv absorptions were determined  
 IT 36932-91-9 36932-92-0 36932-93-1  
 36932-94-2 36932-95-3  
 RL: PRP (Properties)  
 (uv spectrum of)  
 RN 36932-91-9 CAPLUS  
 CN Propanedioic acid, (5,6-diphenylpyrazinyl)methyl-, diethyl ester (9CI)  
 (CA INDEX NAME)



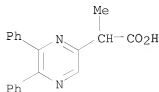
RN 36932-92-0 CAPLUS  
 CN Pyrazineacetic acid,  $\alpha$ -methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



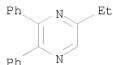
RN 36932-93-1 CAPLUS  
 CN Pyrazineacetamide,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



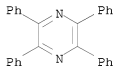
RN 36932-94-2 CAPLUS  
 CN Pyrazineacetic acid,  $\alpha$ -methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 36932-95-3 CAPLUS  
 CN Pyrazine, 5-ethyl-2,3-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 317 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1972:85761 CAPLUS  
 DOCUMENT NUMBER: 76:85761  
 ORIGINAL REFERENCE NO.: 76:13795a,13798a  
 TITLE: Photo- and thermal elimination of nitrogen from 4-phenyl- and 4,5-diphenyl-1,2,3-triazole  
 AUTHOR(S): Selvarajan, R.; Boyer, J. H.  
 CORPORATE SOURCE: Chem. Dep., Univ. Illinois, Chicago, IL, USA  
 SOURCE: Journal of Heterocyclic Chemistry (1972), 9(1), 87-90  
 CODEN: JHTCAD; ISSN: 0022-152X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB PhCH2CN and small amts. of PhCH2OMe, PhCN, and BzOMe were produced by irradiation of either 4-phenyl-1,2,3-triazole (I) or 4-phenyl-5-deuterio-1,2,3-triazole in MeOH at 254 nm. In CH2Cl2, irradiation of I produced PhCH2CN and small amts. of 3,6-diphenyl-1,2,4,5-tetrazine. Irradiation of 4,5-diphenyl-1,2,3-triazole (II) in MeOH gave 2,4,5-triphenylimidazole (III) and trace amts. of Ph2CHCN, BzNH2, PhCH2OMe, PhCN, and BzOMe. Irradiation of 2,3-diphenyl-2H-azirine (IV) in MeOH gave small amts. of PhCH2OMe, BzH, PhCN, BzOMe, BzNH2, as well as 2,3,5,6-tetraphenylpyrazine (V) and in CH2Cl2 it gave III and small amts. of BzH, PhCN, V, and BzMe. On heating I in n-hexadecane, elimination of N at 290° left PhCH2CN as the only identified product. Similar pyrolysis of II produced V along with an intractable material. An efficient thermal isomerization of IV gave 2-phenylindole.  
 IT 642-04-6P  
 RL: PREP (Preparation)  
 (from photolysis of diphenyltriazole or diphenylazirine)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 318 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1971:551757 CAPLUS  
 DOCUMENT NUMBER: 75:151757  
 ORIGINAL REFERENCE NO.: 75:23937a,23940a  
 TITLE: Approaches to heterocyclic analogs of biphenylene. II. 5,5',6,6'-Tetraphenyl-2,5'-bipyrazinyls  
 AUTHOR(S): England, P.; McDougall, R. H.  
 CORPORATE SOURCE: Dep. Chem., North East Lond. Polytech., London, UK  
 SOURCE: Journal of the Chemical Society [Section] C: Organic (1971), (21), 3605-11  
 CODEN: JSOQAX; ISSN: 0022-4952  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

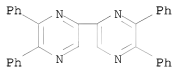
GI For diagram(s), see printed CA Issue.

AB Reaction of 3-substituted 2-halo-5,6-diphenylpyrazines (halo=Cl or Br, substituent=H, OMe, CN, CONH2, CO2Me) with Cu in DMF gave 3,3'-disubstituted 5,5',6,6'-tetraphenyl-2,2'-bipyrazinyls, which were converted into other disubstituted tetraphenylbipyrazinyls (e.g. substituent=OH, CO2H). Ir spectra indicate that hydroxypyrazines exist predominantly in the amide form, but that 3,3'-dihydroxy-5,5',6,6'-tetraphenyl-2,2'-bipyrazinyl exists only in the hydroxy form, which is stabilized by H bonding. Me 3-hydroxy- and 3-methoxy-5,6-diphenyl-2-pyrazinecarboxylates were converted to their corresponding acids by reaction with CuCl-DMF.

IT 33288-77-6P 34121-87-4P 34121-88-5P  
 34121-89-6DP, [2,2'-Bipyrazine]-3,3'-dicarboxylic acid,  
 5,5',6,6'-tetraphenyl-, copper complexes 34121-89-6P  
 34121-90-9P 34122-20-8P 34122-21-9P  
 34122-22-0P 34122-23-1P 34122-24-2P  
 34252-36-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

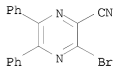
RN 33288-77-6 CAPLUS

CN 2,2'-Bipyrazine, 5,5',6,6'-tetraphenyl- (8CI) (CA INDEX NAME)



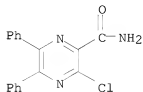
RN 34121-87-4 CAPLUS

CN Pyrazinecarbonitrile, 3-bromo-5,6-diphenyl- (8CI) (CA INDEX NAME)



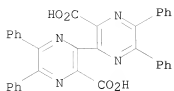
RN 34121-88-5 CAPLUS

CN Pyrazinecarboxamide, 3-chloro-5,6-diphenyl- (8CI) (CA INDEX NAME)

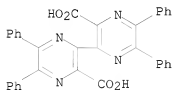


RN 34121-89-6 CAPLUS

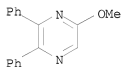
CN [2,2'-Bipyrazine]-3,3'-dicarboxylic acid, 5,5',6,6'-tetraphenyl- (8CI)  
 (CA INDEX NAME)



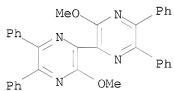
RN 34121-89-6 CAPLUS  
 CN [2,2'-Bipyrazine]-3,3'-dicarboxylic acid, 5,5',6,6'-tetraphenyl- (8CI)  
 (CA INDEX NAME)



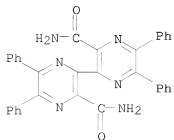
RN 34121-90-9 CAPLUS  
 CN Pyrazine, 5-methoxy-2,3-diphenyl- (8CI, 9CI) (CA INDEX NAME)



RN 34122-20-8 CAPLUS  
 CN 2,2'-Bipyrazine, 3,3'-dimethoxy-5,5',6,6'-tetraphenyl- (8CI) (CA INDEX NAME)

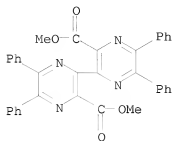


RN 34122-21-9 CAPLUS  
 CN [2,2'-Bipyrazine]-3,3'-dicarboxamide, 5,5',6,6'-tetraphenyl- (8CI) (CA INDEX NAME)



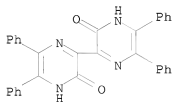
RN 34122-22-0 CAPLUS

CN [2,2'-Bipyrazine]-3,3'-dicarboxylic acid, 5,5',6,6'-tetraphenyl-, dimethyl ester (8CI) (CA INDEX NAME)



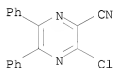
RN 34122-23-1 CAPLUS

CN [2,2'-Bipyrazine]-3,3'-diol, 5,5',6,6'-tetraphenyl- (8CI) (CA INDEX NAME)



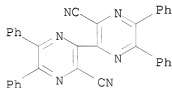
RN 34122-24-2 CAPLUS

CN Pyrazinecarbonitrile, 3-chloro-5,6-diphenyl- (8CI, 9CI) (CA INDEX NAME)



RN 34252-36-3 CAPLUS

CN [2,2'-Bipyrazine]-3,3'-dicarbonitrile, 5,5',6,6'-tetraphenyl- (8CI) (CA INDEX NAME)



L14 ANSWER 319 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1971:541147 CAPLUS

DOCUMENT NUMBER: 75:141147

ORIGINAL REFERENCE NO.: 75:22281a

TITLE: Strecker degradation of  $\alpha$ -amino acids with benzil and with benzoin

AUTHOR(S): Al-Sayyab, A. F.; Atto, A. T.; Sarah, F. Y.  
CORPORATE SOURCE: Dep. Chem., Basrah Univ., Basrah, Iraq  
SOURCE: Journal of the Chemical Society [Section] C: Organic  
(1971), (19), 3260-1  
CODEN: JSOQAX; ISSN: 0022-4952

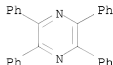
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB When heated with  $\alpha$ -amino acids to the min. temperature required for decarboxylation, benzil gave 2,3,5,6-tetraphenylpyrazine, CO<sub>2</sub>, and the aldehyde corresponding to the amino acid, and benzoil gave a mixture of 2,3,5,6-tetraphenylpyrazine, 2,3,4,5-tetraphenylpyrrole, CO<sub>2</sub>, NH<sub>3</sub>, and the corresponding aldehyde.

IT 642-04-6P  
RL: FORM (Formation, nonpreparative); PREP (Preparation)  
(formation of, by Strecker degradation of amino acids)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 320 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1971:518287 CAPLUS

DOCUMENT NUMBER: 75:118287

ORIGINAL REFERENCE NO.: 75:18673a,18676a

TITLE: Alkylation of 4-oxopteridines

AUTHOR(S): Neiman, Zohar; Bergmann, Felix; Meyer, Amatzya Y.

CORPORATE SOURCE: Hadassah Med. Sch., Hebrew Univ., Jerusalem, Israel

SOURCE: Chem. Biol. Pteridines, Proc. Int. Symp., 4th (1970),  
Meeting Date 1969, 29-34. Editor(s): Iwai, K. Int.  
Acad. Print. Co.: Tokyo, Japan.

CODEN: 23BVAJ

DOCUMENT TYPE: Conference

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB 4-Pteridin-one (I), 6,7-dimethyl-4-pteridinone (II), and  
6,7-diphenyl-4-pteridinone (III) were alkylated exclusively in the  
pyrimidine ring by MeI-DMF to yield the corresponding 1,3-dimethyl-4-  
oxopteridinium salts IV, V, and VI in 10%, 50% and 50% yield, resp. The  
pyrimidine ring of these methylation products was cleaved readily by hot  
2N NaOH to yield the corresponding pyrazines. Reduction of IV, V, and VI with  
NaBH<sub>4</sub> yielded the corresponding derivs. of 1,2-dihydropteridine. The  
reaction path to IV, V, and VI was studied by paper chromatog., and  
related with charge ds. calculated by the HMO and the SCF-Pariser-Pople-Parr  
methods.

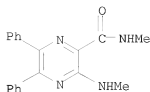
IT 25472-83-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 25472-83-7 CAPLUS

CN Pyrazinecarboxamide, N-methyl-3-(methylamino)-5,6-diphenyl- (8CI, 9CI)  
(CA INDEX NAME)





L14 ANSWER 321 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1971:488571 CAPLUS

DOCUMENT NUMBER: 75:88571

ORIGINAL REFERENCE NO.: 75:14029a,14032a

TITLE: Heterocyclic analogs of biphenylene. I. Reaction of 5,6-diaryl-2,3-dihydropyrazines with alcoholic alkali

McDougall, R. H.; England, P.

Dep. Chem., North East London Polytech., London, UK

SOURCE: Journal of the Chemical Society [Section] C: Organic (1971), (15), 2685-9

CODEN: JSOQAX; ISSN: 0022-4952

DOCUMENT TYPE: Journal

LANGUAGE: English

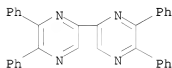
AB 2,3-Dihydro-5,6-diphenylpyrazine reacted with NaOEtOH to give 2,3-diphenylpyrazine and 5,5',6,6'-tetraphenyl-2,2'-bipyrazine. 2,3-Dihydro-5,6-bis(p-methoxyphenyl)pyrazine reacted similarly, but 2,3-dihydro-5,6-bis(p-nitrophenyl)pyrazine (I) gave polymers. The reaction of 4,4'-dinitrobenzil with H<sub>2</sub>N(CH<sub>2</sub>)<sub>2</sub>NH<sub>2</sub> gave not only I but also N,N'-bis(p-nitrobenzoyl)ethylenediamine.

IT 33288-77-6P 33288-78-7P

RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)

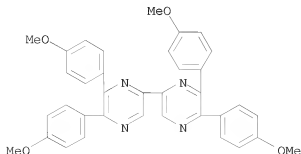
RN 33288-77-6 CAPLUS

CN 2,2'-Bipyrazine, 5,5',6,6'-tetraphenyl- (8CI) (CA INDEX NAME)

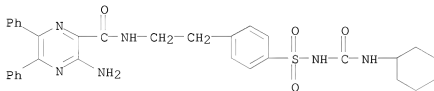


RN 33288-78-7 CAPLUS

CN 2,2'-Bipyrazine, 5,5',6,6'-tetraakis(p-methoxyphenyl)- (8CI) (CA INDEX NAME)



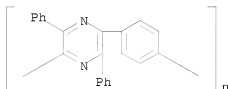
L14 ANSWER 322 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1971:488570 CAPLUS  
 DOCUMENT NUMBER: 75:88570  
 ORIGINAL REFERENCE NO.: 75:14029a,14032a  
 TITLE: New oral antidiabetic drugs. I  
 AUTHOR(S): Ambrogi, V.; Bloch, Konrad; Daturi, S.; Griggi, P.; Logemann, W.; Parenti, M. A.; Rabini, T.; Tommasini, R.  
 CORPORATE SOURCE: Ist. Carlo Erba Ric. Ter., Milan, Italy  
 SOURCE: Arzneimittel-Forschung (1971), 21(2), 200-4  
 CODEN: ARZNAD; ISSN: 0004-4172  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB All of 20 new pyrazinecarboxamidoethylphenylsulfonyleureas had hypoglycemic activity in mice, and 19 were active in rats; in rats N - (4 - [β - (5 -methylpyrazine -2-carboxamido)ethyl]phenylsulfonyl)-N'-cyclohexylurea (I) was the most active producing a hypoglycemic activity of 46% at 1.5 mg/kg orally. 4-(4-[β-(5-Methylpyrazine-2-carboxamido)ethyl]phenylsulfonyl)-1,1 - hexamethylenesemicarbazide (II), the only pyrazinecarboxamidoethylphenylsulfonylsemicarbazide tested, was as effective as I at the same dose. Neither of the 2 pyrazinecarboxamidocycloalkylphenylsulfonyleureas tested had antidiabetic activity in mice or rats. The sulfonamide were synthesized by reacting pyrazine-, pyridazine-, or pyrimidinecarboxamidobenzenesulfonamides with cyclohexyl isocyanate. Intermediate benzenesulfonamides were prepared by acylation of p-(β-aminoethyl)benzenesulfonamide. II was prepared from Me-4-[β-(5-methylpyrazine-2-carboxamido)ethyl]phenylsulfonycarbamate and 1-aminohexamethyleneimine.  
 IT 33282-78-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)  
 RN 33282-78-9 CAPLUS  
 CN Urea, 1-[[p-[2-(3-amino-5,6-diphenylpyrazinecarboxamido)ethyl]phenyl]sulfonyl]-3-cyclohexyl- (8CI) (CA INDEX NAME)



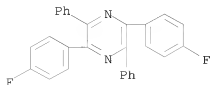
L14 ANSWER 323 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1971:406438 CAPLUS  
 DOCUMENT NUMBER: 75:6438  
 ORIGINAL REFERENCE NO.: 75:1075a,1078a  
 TITLE: Polyaromatic pyrazines: synthesis and thermogravimetric analysis  
 AUTHOR(S): Higgins, Jerry; Jones, Joe F.; Thornburgh, Allan  
 CORPORATE SOURCE: Dep. Chem., Illinois State Univ., Normal, IL, USA  
 SOURCE: Journal of Polymer Science, Polymer Chemistry Edition (1971), 9(3), 763-9  
 CODEN: JPLCAT; ISSN: 0449-296X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Pyrazine polymers (I), where R is H or Ph and Ar is p-phenylene, p,p'-biphenylene, p,p'-oxybis(phenylene), or p,p'-

methylenebis(phenylene), were thermostable to 450-550° in air for short periods and were prepared by the condensation of the corresponding bis- $\alpha$ -haloaromatic ketones with NH<sub>3</sub> in AcNMe<sub>2</sub> in the presence of air or peroxides. I(R = H, Ar = p,p'-methylenebis(phenylene)) and I(R = Ph, Ar = p-phenylene) (II) have an inherent viscosity of 0.37 and 0.18, resp., (0.25 g/100 ml HCO<sub>2</sub>H). Polymer II had a softening point .apprx.270-300°.

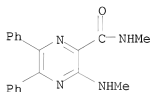
IT 31347-80-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 31347-80-5 CAPLUS  
 CN Poly[(3,6-diphenyl-2,5-pyrazinediyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



L14 ANSWER 324 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1970:99734 CAPLUS  
 DOCUMENT NUMBER: 72:99734  
 ORIGINAL REFERENCE NO.: 72:18064h,18065a  
 TITLE: Fragmentation without rearrangement of the p-fluoro label in the mass spectra of some six-membered heterocycles  
 AUTHOR(S): Bursey, Maurice M.; Elwood, Thomas A.  
 CORPORATE SOURCE: Venable Chem. Lab., Univ. of North Carolina, Chapel Hill, NC, USA  
 SOURCE: Journal of Organic Chemistry (1970), 35(3), 793-6  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Scrambling results by the p-fluoro labeling techniques are reported for a pentaarylpyridine, a tetraarylpyrazine, and a triaryl-as-triazine. There is little or no randomization of the label before each of the major fragmentations of the mol. ions. Such results are discordant with the statistical randomization of mol. ions of six-membered aromatic compds. found by D labeling studies. The discrepancy could suggest that the valence isomer formation of six-membered rings postulated previously to occur on electron impact is not the mechanism of randomization; another mechanism, less likely but preserving this previous suggestion, is also proposed.  
 IT 22158-34-5  
 RL: PRP (Properties)  
 (mass spectrum of)  
 RN 22158-34-5 CAPLUS  
 CN Pyrazine, 2,5-bis(p-fluorophenyl)-3,6-diphenyl- (8CI) (CA INDEX NAME)



L14 ANSWER 325 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1970:55408 CAPLUS  
 DOCUMENT NUMBER: 72:55408  
 ORIGINAL REFERENCE NO.: 72:10145a,10148a  
 TITLE: Reduction of quaternary pteridines and purines by sodium borohydride  
 AUTHOR(S): Neiman, Zohar  
 CORPORATE SOURCE: Hadassah Med. Sch., Hebrew Univ., Jerusalem, Israel  
 SOURCE: Journal of the Chemical Society [Section] C: Organic (1970), (1), 91-4  
 CODEN: JSO0AX; ISSN: 0022-4952  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 72:55408  
 AB In the 3,4-dihydro-1,3-dimethyl-5,6-diphenyl-4-oxopteridinium cation, and in the 1,3-dimethyl-8-phenylhy-po-xanthinium cation, position 2 of the pyrimidine ring is reduced by NaBH<sub>4</sub>. The analogous reaction at position 8 was observed for the 7,9-dimethylhypoxanthinium cation. The structures assigned to the reduction products are supported by spectral data and by degradation reactions.  
 IT 25472-83-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)  
 RN 25472-83-7 CAPLUS  
 CN Pyrazinecarboxamide, N-methyl-3-(methylamino)-5,6-diphenyl- (8CI, 9CI) (CA INDEX NAME)



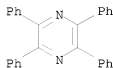
L14 ANSWER 326 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1969:68309 CAPLUS  
 DOCUMENT NUMBER: 70:68309  
 ORIGINAL REFERENCE NO.: 70:12781a  
 TITLE: Pyrazines  
 AUTHOR(S): Vinot, Nicole; Pinson, Jean  
 CORPORATE SOURCE: Lab. Chim. Org. Struct., Paris, Fr.  
 SOURCE: Bulletin de la Societe Chimique de France (1968), (12), 4970-4  
 CODEN: BSCFAS; ISSN: 0037-8968  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French  
 AB Ketols RCOCH(OH)R<sub>1</sub> (I) are treated with NH<sub>4</sub>OAc to give 2,5-bis(R-substituted)-3,6-bis(R<sub>1</sub>-substituted)-pyrazines. 2-(R-Substituted)-3-(R<sub>1</sub>-substituted)-5-(R<sub>2</sub>-substituted)-6-(R<sub>3</sub>-substituted)pyrazines are prepared from I, R<sub>2</sub>COCH(OH)R<sub>3</sub>, and NH<sub>4</sub>OAc. N.M.R., ir, and uv data are given. It is proposed that RCOCH(NH<sub>2</sub>)R<sub>1</sub> are obtained as intermediates.  
 IT 642-04-6P 21798-19-6P 21798-20-9P  
 21798-21-0P 21798-23-2P 21798-24-3P  
 21798-25-4P 21798-26-5P 21798-27-6P  
 21798-28-7P 21798-32-3P 21885-49-4P  
 21885-50-7P 21885-51-8P 21885-52-9P

21885-53-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

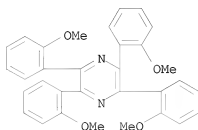
RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



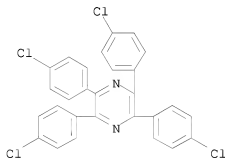
RN 21798-19-6 CAPLUS

CN Pyrazine, tetrakis(o-methoxyphenyl)- (8CI) (CA INDEX NAME)



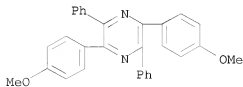
RN 21798-20-9 CAPLUS

CN Pyrazine, tetrakis(4-chlorophenyl)- (9CI) (CA INDEX NAME)



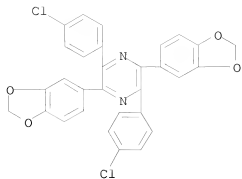
RN 21798-21-0 CAPLUS

CN Pyrazine, 2,5-bis(p-methoxyphenyl)-3,6-diphenyl- (8CI) (CA INDEX NAME)



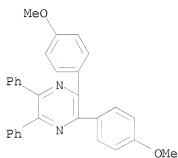
RN 21798-23-2 CAPLUS

CN Pyrazine, 2,5-bis(p-chlorophenyl)-3,6-bis[3,4-(methylenedioxy)phenyl]- (8CI) (CA INDEX NAME)



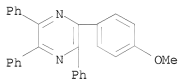
RN 21798-24-3 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-diphenyl- (9CI) (CA INDEX NAME)



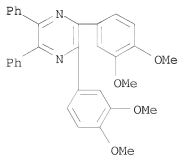
RN 21798-25-4 CAPLUS

CN Pyrazine, 2-(p-methoxyphenyl)-3,5,6-triphenyl- (8CI) (CA INDEX NAME)

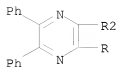


RN 21798-26-5 CAPLUS

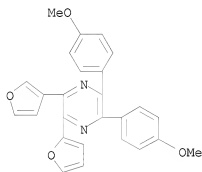
CN Pyrazine, 2,3-bis(3,4-dimethoxyphenyl)-5,6-diphenyl- (8CI) (CA INDEX NAME)



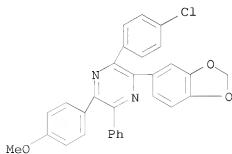
RN 21798-27-6 CAPLUS  
 CN Pyrazine, 2,3-di-2-furanyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



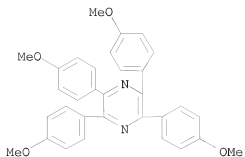
RN 21798-28-7 CAPLUS  
 CN Pyrazine, 2,3-di-2-furyl-5,6-bis(p-methoxyphenyl)- (8CI) (CA INDEX NAME)



RN 21798-32-3 CAPLUS  
 CN Pyrazine, 2-(p-chlorophenyl)-6-(p-methoxyphenyl)-3-[3,4-(methylenedioxy)phenyl]-5-phenyl- (8CI) (CA INDEX NAME)

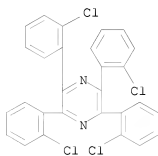


RN 21885-49-4 CAPLUS  
 CN Pyrazine, tetrakis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



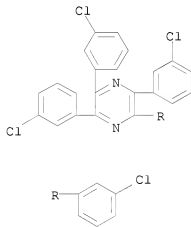
RN 21885-50-7 CAPLUS

CN Pyrazine, tetrakis(o-chlorophenyl)- (8CI) (CA INDEX NAME)



RN 21885-51-8 CAPLUS

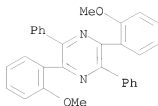
CN Pyrazine, tetrakis(m-chlorophenyl)- (8CI) (CA INDEX NAME)



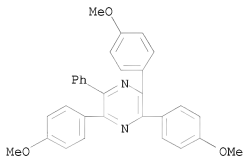
RN 21885-52-9 CAPLUS

CN Pyrazine, 2,5-bis(2-methoxyphenyl)-3,6-diphenyl- (9CI) (CA INDEX NAME)



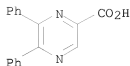


RN 21885-53-0 CAPLUS  
CN Pyrazine, tris(4-methoxyphenyl)phenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 327 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1969:20083 CAPLUS  
DOCUMENT NUMBER: 70:20083  
ORIGINAL REFERENCE NO.: 70:3759a,3762a  
TITLE: Pyrazinoic acids  
INVENTOR(S): Litmanowitsch, Menasche; Felder, Ernst; Pitre, Davide  
PATENT ASSIGNEE(S): Eprova Ltd.  
SOURCE: Patentschrift (Switz.), 3 pp.  
CODEN: SWXXAS  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	CH 458361		19680830	CH 1965-617	19650115
GI	For diagram(s), see printed CA Issue.				
AB	Pyrazinoic acids (I) are prepared by treating $\alpha,\beta$ -diaminopropionic acid hydrochloride (II) with an $\alpha,\beta$ -diketone or $\alpha,\beta$ -oxoaldehyde in alkaline conditions and oxidizing the resulting dihydropyrazinoic acid in solution. Thus, 35 g. II was added to 2250 cc. MeOH containing 40 g. NaOH, 52.5 g. benzil added with stirring, the mixture refluxed 20 min., air blown through 40 min., and the solution concentrated in vacuo, treated with 300 cc. Et <sub>2</sub> O, and kept 12-16 hrs. at 0° to precipitate 68.5 g. I (R = R <sub>1</sub> = Ph) (Ia) Na salt; 14.1 g. Ia, m. 174-9°, was obtained. Similarly prepared were I (R, R <sub>1</sub> , and m.p. given): Me, Me, 180-1°; Ph, H, 190°; H, Ph, 205°; H, Me, 197°.				
IT	13515-07-6P RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)				
RN	13515-07-6 CAPLUS				
CN	2-Pyrazinecarboxylic acid, 5,6-diphenyl- (CA INDEX NAME)				



L14 ANSWER 328 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1968:436172 CAPLUS  
 DOCUMENT NUMBER: 69:36172  
 ORIGINAL REFERENCE NO.: 69:6762h,6763a  
 TITLE: (3-Amino-2-pyrazinecarbonyl)guanidines  
 INVENTOR(S): Cragoe, Edward J., Jr.  
 PATENT ASSIGNEE(S): Merck and Co., Inc.  
 SOURCE: U.S., 26 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3313813		19670411	US 1963-313315	19621030
DE 1795438			DE	

GI For diagram(s), see printed CA Issue.  
 AB Title compds. I are prepared from II, III, and IV. Thus, 3318 g. SO<sub>2</sub>Cl<sub>2</sub> is added in 30 min. to 765 g. Me 3-amino-2-pyrazinecarboxylate in 5.1 C<sub>6</sub>H<sub>6</sub>; the mixture is agitated 1 hr., refluxed 5 hrs., and agitated overnight to give 724 g. Me 3-amino-5,6-dichloropyrazinecarboxylate (V), m. 233-4° (MeCN). A mixture of 100 g. V. and 1.1 Me<sub>2</sub>SO is heated to 65° and NH<sub>3</sub> gas is introduced into the mixture in 45 min. at 65-70°; the mixture is cooled to 10° and NH<sub>3</sub> is introduced in 1.25 hrs. to give 91.5% Me 3,5-diamino-6-chloropyrazinecarboxylate, m. 212-13° (MeCN). Also prepared, by known methods are the following II (X, Y, Z, and m.p. given): MeO, NH<sub>2</sub>, H, 252-4° (decomposition); MeO, NH<sub>2</sub>, Br, 217-19°; MeO, NH<sub>2</sub>, iodine, 200-2°; MeO, PhNH, Cl, 171.5-73°; MeO, p-ClC<sub>6</sub>H<sub>4</sub>NH, Cl, 207-8°; MeO, Me<sub>2</sub>N, Cl, 145.5-6.5°; MeO, MeS, Cl, 214-16°; MeO, MeSO, Cl, 237.5-40.5° (decomposition); MeO, OH, Cl, .apprx.245° (decomposition); MeO, OH, H, 220-60° (decomposition); MeO, NH<sub>2</sub>, H, 252-4° (decomposition); MeO, Me<sub>2</sub>N, H, 242.5-3.5°; MeO, MeO, H, 205.5-7.5°; MeO, PhCH<sub>2</sub>NH, H, 157-8°; MeO, MeO, MeO, Cl, 255-7°; MeO, MeS, Cl, 212-14°; MeO, SH, Cl, 207-8° (decomposition); MeO, EtO, Cl, 123-5°; MeO, H, Me, 138.5-40.5°; MeO, Cl, Me, 176.5-9.5°; MeO, Me<sub>2</sub>N, Me, 108.5-10.5°; MeO, Me, H, 165-7°; MeO, Me, Br, 179-81°; NH<sub>2</sub>, H, Et, 165.5-8.5°; OH, H, Et, 149-52°; MeO, H, Et, 85-7.5°; OH, cyclohexyl, H, 182.5-3.5°; MeO, cyclohexyl, H, 173-4.5°; NH<sub>2</sub>, H, cyclohexyl, -; OH, H, cyclohexyl, -; MeO, H, cyclohexyl, 126.5-8.0°; NH<sub>2</sub>, H, cyclopropyl, 185.5-7.5°; OH, H, cyclopropyl, 169-72°; MeO, H, cyclohexyl, 112.5-14.5°; MeO, Ph, H, 231-2°; MeO, H, Ph, 140-1°; MeO, Cl, Ph, 187.5-91.5°; MeO, Ph, Br, 217-21°; OH, H, p-ClC<sub>6</sub>H<sub>4</sub>, 213-15°; MeO, H, p-ClC<sub>6</sub>H<sub>4</sub>, 181.5-3.5°; MeO, Cl, Ph, 187.5-90.5°; MeO, Me<sub>2</sub>N, Ph, 167-9.5°; MeO, H, Cl, 142° (decomposition); MeO, MeHN, Cl, 221-2°; MeO, EtNH, Cl, 149-50°; MeO, PrNH, Cl, 138-40°; MeO, iso-PrNH, Cl, 125.5-6.5°; MeO, CH<sub>2</sub>:CHCH<sub>2</sub>NH, Cl, 105-6.5°; MeO, BuNH, Cl,

140-2°; MeO, sec-BuNH, Cl, 106-8°; MeO, iso-BuNH, Cl, 113.5-15.5°; MeO, tert-BuNH, Cl, 98-108°; MeO, Me(CH<sub>2</sub>)<sub>4</sub>NH, Cl, 100.5-2.5°; MeO, BuCHMeNH, Cl, -, MeO, Et<sub>2</sub>CHNH, Cl, -, MeO, Me(CH<sub>2</sub>)<sub>5</sub>NH, Cl, 72.5-5.5°; MeO, cyclopropylmethylamino, Cl, 132-3°; MeO, cyclopropylamino, Cl, 167-9°; MeO, cyclopentylamino, Cl, 119.5-21.5°; MeO, PhCH<sub>2</sub>NH, Cl, 157-8°; MeO, p-MeC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NH, Cl, 112.5-14.5°; MeO, o-FC<sub>6</sub>H<sub>4</sub>CHNH, Cl, 171-4°; MeO, p-ClC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NH, Cl, 136-7°; MeO, PhCH<sub>2</sub>CH<sub>2</sub>NH, Cl, 115-19°; MeO, F<sub>3</sub>CCH<sub>2</sub>NH, Cl, 153-4°; MeO, F<sub>3</sub>CCH<sub>2</sub>CH<sub>2</sub>NH, Cl, 124.5-5.5°; MeO, HOCH<sub>2</sub>CH<sub>2</sub>NH, Cl, 155-7°; MeO, HOCH<sub>2</sub>(CHOH)<sub>4</sub>CH<sub>2</sub>NH, Cl, 172-5°; MeO, H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>NH, Cl, 265°; MeO, Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>NH, Cl, 257°; MeO, 4-pyridylmethylamino, Cl, 95-7°; Me, 2-furylmethylamino, Cl, 148-9°; MeO, MeEtN, Cl, 102-4°; MeO, MePrN, Cl, 83.5-5.5°; MeO, iso-PrMeN, Cl, 75.5-7.5°; MeO, Me(CH<sub>2</sub>:CHCH<sub>2</sub>)N, Cl, 90.5-2°; MeO, MeBun, Cl, 59.5-61.5°; MeO, Et<sub>2</sub>N, Cl, 99-101°; MeO, EtPrN, Cl, -, MeO, iso-PrEtN, Cl, -, MeO, Et(CH<sub>2</sub>:CHCH<sub>2</sub>)N, Cl, -, MeO, EtBun, Cl, 77.5-9.5°; Me, Pr<sub>2</sub>N, Cl, 68.5-71.5°; MeO, PrBuN, Cl, -, MeO, 1-pyrrolidinyl, Cl, 168-71°; MeO, hexamethylenimino, Cl, 109-11°; MeO, 4-methylpiperazino, Cl, 186-8°; MeO, MeNHNH, Cl, 136.5-8°; MeO, Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>O, Cl, 134.5-6.5°; NH<sub>2</sub>, H, Cl, 227-30°; OH, H, MeSO<sub>2</sub>, 239-42° (decomposition).

p-Methylbenzylamine is treated with H<sub>2</sub>NC(:NH)SMe.0.5H<sub>2</sub>SO<sub>4</sub> to give 28% p-MeC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NHC(:NH)NH<sub>2</sub>HCl, m. 153-5°. Similarly prepared are Me(PhCH<sub>2</sub>)NC(:NH)NH<sub>2</sub>.HCl, m. 122.5-5.5°, and the following RNHC(:NH)NH<sub>2</sub>.HCl (R and m.p. given): o-ClC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, 131-6°; p-ClC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, 162.5-4.5°; p-MeOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, 132-7°; 2,4-Me<sub>2</sub>C<sub>6</sub>H<sub>3</sub>CH<sub>2</sub>, 105-15°; 2,4-Cl<sub>2</sub>C<sub>6</sub>H<sub>3</sub>CH<sub>2</sub>, 145-8°; 3,4-Cl<sub>2</sub>C<sub>6</sub>H<sub>3</sub>CH<sub>2</sub>, 153-7°; PhCH<sub>2</sub>CH<sub>2</sub>, 135-8°; PhCH<sub>2</sub>, 175-8°.

5,6-Diaminouracil-HCl (17.9 g.) is treated at 60° with 14.9 g. cyclohexylglyoxal-0.5H<sub>2</sub>O to give 7.5 g. 7-cyclohexyllumazine [III (X = H, Y = cyclohexyl)], m. 229-31°, which is hydrolyzed to give II (X = OH, Y = cyclohexyl, Z = H). Similarly prepared are (m.p. given): III (X = Me, Y = Ph) [or III (X = Me, Y = Me)], 281.5-2.5°; III (X = Ph, Y = Me) [or III (X = Me, Y = Ph) [sic]], 254.5-5.5°; II (X = OH, Y = Ph, Z = Me) [or II (X = OH, Y = Me, Z = Ph)], 193.5-4.5°; II (X = OH, Y = Me, Z = Ph) [or II (X = OH, Y = Ph, Z = Me)] [sic], 155-6°. II (X = MeO, Y = Ph, Z = Me) [or II (X = MeO, Y = Me, Z = Ph)] (m. 163-4°) and II (X = MeO, Y = Me, Z = Ph) [or II (X = MeO, Y = Ph, Z = Me)] [sic] (m. 162.5-3.5°) are prepared by esterification. Methyl 3-isopropylidenamino-6-anilino-2-pyrazinecarboxylate, m. 195.5-7.5°, is prepared from Me<sub>2</sub>CO and the amine. Me 3-amino-5,6,7,8-tetrahydroquinoxaline-2-carboxylate, m. 154-5°, and Me 3-amino-7-chloroquinoxaline-2-carboxylate, m. 224.5-5.5°, are prepared by esterification. Alloxan-H<sub>2</sub>O (61.44 g.) is treated with 60 g. 3,4-(H<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>Cl to give 33% 8-chloroalloxazine, m. 365-6°, and 42% 7-Chloroalloxazine, m. >380°, which is treated at 165° with NH<sub>3</sub> in an autoclave to give 68% 3-amino-7-chloroquinoxaline-2-carboxylic acid, m. 191-2° (decomposition). A mixture of 33 g. II (X = NH<sub>2</sub>, Y = H, Z = Cl), 200 ml. Ac<sub>2</sub>O, and 200 ml. HC(OEt)<sub>3</sub> is refluxed 1.5 hrs. to give 20 g. 4-hydroxy-6-chloropteridine (VI), m. 268-70° (decomposition). VI (5.5 g.) is treated with 4.4 g. PhCH<sub>2</sub>SH to give 5.5 g. 4-hydroxy-6-benzylthiopteridine (VIII), m. 233-5°. Similarly prepared is 4-hydroxy-6-methylthiopteridine, m. 289.5-91.5°. VII is heated with NaOH to give II (X = OH, Y = H, Z = PhCH<sub>2</sub>S(VIII)), m. 138.9°. Similarly prepared is II (X = OH, Y = H, Z = MeS), m. 182-4° (decomposition). II (X = MeO, Y = Me<sub>2</sub>N, Z = Cl) (11.5 g.) is treated with 26.3 g. H<sub>2</sub>NC(:NH)NH<sub>2</sub>.HCl (IX) in the presence of 5.75 g. Na to give 93% (3-amino-5-dimethylamino-6-chloro-2-pyrazinecarbonyl)guanidine (X), m. 216-17°, HCl salt m. 298° (decomposition). Similarly prepared is I.HCl (R = R<sub>1</sub> = H, X = Y = Cl) (m. 259-61°) which is treated with

Me2NH to give X. II (X = MeO, Y = Me2NCH2CHO, Z = Cl) (9.4 g.) is treated with 20.0 g. IX in the presence of 4 g. Na to give 2.5 g. I.2HCl [R = R1 = H, X = NHC(:NH)NH2, Z = Cl], m. >340°. A solution of 8.5 g. VIII in 50 ml. Ac2O is heated 5 hrs. to give 6.6 g. 2-methyl-6-benzylthio-4H-pyrazine[2,3-d][1,3]oxazin-4-one [IV (X = PhCH2S)] (XI), m. 116.5-18.5°; similarly prepared is IV (X = MeS), m. 189-91°.

XI (3.4 g.) is treated with 5.0 g. IX in the presence of 1.0 g. Na to give 1.1 g. I (R = R1 = X = H, Y = PhCH2S), m. 171-3° (decomposition). Also prepared, by the above or related methods, are the following I (R = R1 = H) (X, Y, and m.p. given): NH2, Br, 232.5-5.5° (decomposition); NH2, iodine, 273-4° (decomposition); H, MeS, 203-5°; H, MeSO2, 224-6° (decomposition); OH, H, >310°; NH2, H, 286-8°; Me2N, H, 224-5°; MeO, H, 229-30°; PhCH2NH, H, 231-3°; the following I (R = R1 = H, Y, = Cl) (X and m.p. given): NH2, 240.5-1.5° (HCl salt m. 293.5°); MeNH, 238-9°; EtNH, 217-18°; PrNH, 221-2°; iso-PrNH, 215°; CH2:CHCH2NH, 213-14°; BuNH, 219.5°; sec-BuNH, 208-9°; iso-BuNH, 221°; tert-BuNH, 222-3°; Me(CH2)4NH, 215-16°; BuCHMeNH, 186.5-8.5°; Et2CHNH, 209-11°; Me(CH2)5NH, 194.5-6.5°; cyclopropylmethylamino, 220-1.5°; cyclopropylamino, 213-15°; cyclopentylamino, 219-20°; PhCH2NH, 206-9°; p-MeC6H4CH2NH, 216-17°; o-FC6H4CH2NH, 206-8°; p-ClC6H4CH2NH, 225-6°; PhCH2CH2NH, - (HCl salt m. 199-202°); F3CCH2NH, 232-3°; F3CCH2CH2NH, 221-2.5°; HOCH2CH2NH, - (HCl salt m. 272-3°); HOCH2(CHOH)4CH2NH, 223-4°; H2NCH2CH2NH, - (HCl salt m. 311°); Me2NCH2CH2NH, 192.5-4.5°; 4-pyridylmethylamino, 239-40°; 2-furylmethylamino, 217-18°; PhNH, 246.5-8.5°; p-ClC6H4NH, 276-8°; MeEtN, 229-3°; MeBuN, 214-15°; iso-PrMeN, 207-8°; Me(CH2:CHCH2)N, 207-8°; MeBuN, 208-9°; Et2N, 215°; EtPrN, 224-5°; iso-PrEtN, 207-8°; Et(CH2:CHCH2)N, 208-9°; EtBuN, 200.5-1.5°; Pr2N, 221-2°; PrBuN, 215-17°; 1-pyrrolidinyl, 244.5-5.5°; hexamethylenimino, 224-5°; 4-methylpiperazino, - (2HCl salt m. 229-300°); MeNHNH, 234°; Cl2N, - (HCl salt m. 259-61°); MeNH, 218-19° (decomposition); Me2NNMe, - [2HCl salt m. 262° (decomposition)]; MeNH, 210° (decomposition) [sic]; Me2N, 245° (decomposition); MeBrN, - [HCl salt m. 288° (decomposition)]; EtNH, 207.5-9.5° (decomposition); cyclohexylamino, 221-2° (decomposition); cycloheptylamino, 228-30° (decomposition); cyclopropylamino, 196.5-9° (decomposition); PhNH, 224-6° (decomposition); PhNH, 194.5-5.5° (decomposition) [sic]; Ph2N, 234.5-5.5°; PhClN, 214-16° (decomposition); PhBrN, 234-6° (decomposition); p-ClC6H4NH, 282-5° (decomposition); MePhN, 212-13° (decomposition); MePhN, 218-19° (decomposition) [sic]; Me2NNPh, 204-6° (decomposition); 1-pyrrolidinyl, 220-1°; 1-pyrrol, 211-13°; 3-chloro-1-pyrrol, 246-7° (decomposition); (3-isopropylideneamino-6-anilino-2-pyrazinecarbonyl)guanidine, 214-16° (decomposition); (3-acetoamido-6-methylthio-2-pyrazinecarbonyl)guanidine, 220-2°; the following I (X = NH2, Y = Cl) (R, R1, m.p., and m.p. HCl salt given): H, HOCH2CH2, -, 228.5-9.5° (decomposition); H, Ph, -, -, [MeSO3H salt m. 272° (decomposition)]; H, PhCH2, 215-16° (decomposition); -, H, p-FC6H4CH2, 216-19.5° (decomposition), -, H, PhCHMe, 153-60° (decomposition), -, H, 2-ClOH7CH2, 243.5-5.5° (decomposition), -, H, 3-pyridylmethyl, 280.5-3.5° (decomposition), -, H, p-MeC6H4CH2, 210-12° (decomposition), -, Me, PhCH2, 274.5° (decomposition), -, H, o-ClC6H4CH2, 220-3° (decomposition), -, H, p-ClC6H4CH2, 204-6° (decomposition), -, H, p-MeOC6H4CH2, 175.5-9.5° (decomposition), -, H, 2,4-Me2C6H3CH2, 220-2° (decomposition), -, H, 2,4-Cl2C6H3CH2, -, 267.5-70.5° (decomposition); H, 3,4-Cl2C6H3CH2, 216-19° (decomposition), -, H, PhClH,CH2, 219-21° (decomposition), -, Me, Me, 240° (decomposition), -, [HCl.H2O salt m. 275° (decomposition)]; H,

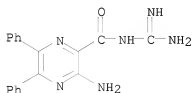
octahydrol-azocinyl, -, -; Et, Et, 265° (decomposition), -, Bu, Bu, 148-9°, -, (RR1 = ) (CH2)4, -, -; (RR1 = ) 3-oxapentamethylene, -, -; the following I (R = R1 = Me, Y = Cl) (X and m.p. given): iso-PrNH, 238-40.5°; CH2:CHCH2NH, 213-15°; BuNH, 187.5°; cyclopropylmethylamino, 196-7°; Me2N, 219°; MeEtN, 217-18°; iso-PrMeN, 209-11°; Et2N, 212-14°; I (R = H, R1 = HOCH2CH2, X = iso-PrNH, Y = Cl).HCl.0.5H2O [m. 185-6° (decomposition)], and 1-(3,5-diamino-6-chloro-2-pyrazinecarbonyl)2,3-dimethylguanidine.

IT 1634-20-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 1634-20-4 CAPLUS

CN Pyrazinecarboxamide, N-amidino-3-amino-5,6-diphenyl- (7CI, 8CI) (CA INDEX NAME)



L14 ANSWER 329 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1968:2880 CAPLUS

DOCUMENT NUMBER: 68:2880

ORIGINAL REFERENCE NO.: 68:543a,546a

TITLE: Reaction of amide homologs. XIX. Thermal reactions

of azomethines with formates and formamide

AUTHOR(S): Sekiya, Minoru; Ito, Keiichi; Hara, Akira; Suzuki, Jiro

CORPORATE SOURCE: Shizuoka Coll. Pharm., Shizuoka, Japan

SOURCE: Chemical & Pharmaceutical Bulletin (1967), 15(6), 802-15

CODEN: CPBTAL; ISSN: 0009-2363

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB The reaction products of 3 azomethines with 2Me3N.5HCO2H (I), HCO2NH4 (II), and HCONH2 were identified and the reaction mechanisms were discussed. A mixture of 2 moles I, II, or HCONH2 and 0.1 mole N-benzylideneaniline (III), N-benzylidenebenzylamine (IV), or N-benzylidenecyclohexylamine (V) was heated at 120-5° for I and II and 165-70° for HCONH2 and the reaction products were identified (N-benzylideneamine, formate or formamide, primary amine product(s), secondary amine product, and tertiary amine product given): III, I, -, N-benzylformanilide (VI), -, IV, I, N-benzylformamide (VII), N,N-dibenzylformamide (VIII), (PhCH2)3N; V, I, N-cyclohexylformamide (IX), N-benzyl-N-cyclohexylformamide (X), N-cyclohexyldibenzylamine (XI); III, II, VII and formanilide, VI, -, IV, II, VII, VIII, (PhCH2)3N; V, II, VII and IX, X, XI; III, HCONH2, VII and formanilide, VI, -, IV, HCONH2, VII, VIII, -, V, HCONH2, VII and IX, X, -. A mixture of 0.1 mole hydrobenzamide and 2 moles HCONH2 was heated 10 hrs. at 165-70°, HCONH2 was removed, and the residual liquid gave a 30% yield of VII. The distillation residue was treated with CHCl3 and the soluble portion was chromatographed on silica gel to give 1.1 g. cyaphenine (XII). Similar treatment of N-benzylidene- $\alpha$ -formamidobenzylamine (XIII) gave 0.5 g. amaron (XIV) and of N,N'-benzylidenebisformamide gave 2.9 g. lophine (XV) and 0.2 g.

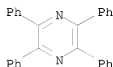
XIV. To a solution of 12 g. XIII in 11 g. HCONH<sub>2</sub>, 50 ml. ligroine (b.p. >105°) was added and the mixture was heated 10 hrs. on a boiling water bath to give 1.3 g. N,N'-benzylidenebisformamide, m. 139°, from the HCONH<sub>2</sub> phase and 0.6 g. hydrobenzamide, m. 97°, from the ligroine phase. In the above reduction reaction of formates, the azomethine double bond is saturated by oxidation of HCO<sub>2</sub>H to CO<sub>2</sub>, while in the oxidation reaction of HCONMe<sub>2</sub>, reductive cleavage of the double bond, induced by self-oxidation of the azomethine, gives the cleaved N-formylated primary amines. The mechanism of the latter reaction involves aldimine, hydroamide, N-arylmethylene-1-formamido-1-arylmethylamine, and N,N'-arylmethylenebisformamide as major or minor intermediates.

IT 642-04-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



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ACCESSION NUMBER: 1967:517182 CAPLUS

DOCUMENT NUMBER: 67:117182

ORIGINAL REFERENCE NO.: 67:22107a,22110a

TITLE: Glycosides of heterocycles. XVIII. Glucosides of

hydroxy- and mercaptopyrazines

AUTHOR(S): Wagner, Guenther; Frenzel, Heiner

CORPORATE SOURCE: Karl-Marx-Univ., Leipzig, Fed. Rep. Ger.

SOURCE: Archiv der Pharmazie und Berichte der Deutschen  
Pharmazeutischen Gesellschaft (1967), 300(5), 421-33  
CODEN: APBDAJ; ISSN: 0376-0367

DOCUMENT TYPE: Journal

LANGUAGE: German

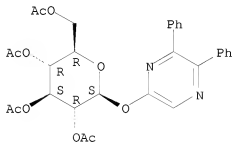
GI For diagram(s), see printed CA Issue.

AB cf. CA 66: 85987n, 29038s. The reaction of the Ag salts of hydroxypyrazines with tetra-O-acetyl- $\alpha$ -D-glucopyranosyl bromide glucose in PhMe gave acetylated-D-glucopyranosides I [R = C<sub>6</sub>H<sub>7</sub>O(OAc)<sub>4</sub>-tetra-O-acetyl-1- $\beta$ -D-glucose-2-yl moiety] (Ia). The following Ia were prepared [R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, m.p., and [ $\alpha$ ]20D (c = 5, O, CHCl<sub>3</sub>) given]: H, H, H, 166-7°, -3.5; Ph, H, H, 135-6.5°, -1.0; Ph, H, Ph, 220-1°, -17.3°; H, Ph, Ph, 117-19°, 30.6°; NO<sub>2</sub>, Ph, Ph, 154-6°, 205.0°. Mercaptopyrazines were converted to S-glycosides II [R = C<sub>6</sub>H<sub>7</sub>O(OAc)<sub>4</sub>] (IIa) and N-glycosides III, [R = C<sub>6</sub>H<sub>7</sub>O(OAc)<sub>4</sub>] (IIIa). The following IIa were prepared [R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, m.p., and [ $\alpha$ ]20D given]: Ph, H, H, 164-5°, -8.3°; H, Ph, 118-20°, 29.0°; H, H, H, 102-3°, -10.9°. Reaction of 2-hydroxypyrazine in aqueous NaOH with tetra-O-acetyl- $\alpha$ -D-glucopyranosyl bromide gave the N-D-glucosyl derivative, m. 167-70°, [ $\alpha$ ]20D 96.0°. These glycosides were deacetylated with NaOMe to the glycosides (R =  $\beta$ -D-glucos-2-yl: compound, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, m.p., and [ $\alpha$ ]20D given): II, H, H, H, 176-8°, -103.0°; III, H, H, H, amorphous, -; I, H, H, H, 187-8°, -52.5° (c 2.5, H<sub>2</sub>O); I, Ph, H, H, 191-2°; 34.5° (c 2.5, Me<sub>2</sub>NCHO); I, Ph, H, Ph, 220-2°, 289-91° (double m.p.), 3.6° (c 2.5, Me<sub>2</sub>NCHO); I, H, Ph, Ph, - (amorphous), 70.8°; I, NO<sub>2</sub>, Ph, Ph, 130-2°, 44.9°; II, Ph, H, H,

130°, 0.0°; II, H, Ph, Ph, - (amorphous), 53.9°; and the N-lowing Ia were prepared [R1, R2, R3, m.p., and [α]20D (c = 5, O, CHCl3) given]: H, H, H, 166-7°, -3.5°; Ph, H, H, 135-6.5°, -1.0°; Ph, H, Ph, 220-1°, -17.3°; H, Ph, Ph, 117-19°, 30.6°; NO2, Ph, Ph, 154-6°, 205.0°. Mercaptopyrazines were converted to S-glycosides II [R = C6H7O(OAc)4] (IIa) and N-glycosides III, [R = C6H7O(OAc)4] (IIIa). The following IIa were prepared [R1, R2, R3, m.p., and [α]20D given]: Ph, H, H, 164-5°, -8.3°; H, Ph, Ph, 118-20°, 29.0°; H, H, H, 102-3°, -10.9°. Reaction of 2-hydroxypyrazine in aqueous NaOH with acetylbromoglucose gave the N-glycoside m. 167-70°, [α]20D 96.0°. These glycosides were deacetylated with NaOMe to the glycosides (R = β-D-glucos-2-yl: compound, R1, R2, R3, m.p., and [α]20D given): II, H, H, H, 176-8°, -103.0°; III, H, H, H, amorphous, -; I, H, H, H, 197-8°, -52.5° (c 2.5, H2O); I, Ph, H, H, 191-2°, 34.5° (c 2.5, Me2NCHO); I, Ph, H, Ph, 220-2°, 289-91° (double m.p.), 3.6° (c 2.5, Me2NCHO); I, H, Ph, Ph, (amorphous), 70.8°; I, NO2, Ph, Ph, 130-2°, 44.9°; II, Ph, H, H, 130°, 0.0°; II, H, Ph, Ph, (amorphous), 53.9°; and the N-glycoside of 2-oxypyrazine m. 231-2°, [α]20D 86.8°. Treatment of 3-phenyl-2-chloropyrazine with KHS gave 3-phenyl-2-mercaptopyrazine m. 148-9°. Treatment of 5,6-diphenyl-2-hydroxypyrazine and P2S5 gave 5,6-diphenyl-2-mercaptopyrazine m. 186-8°.

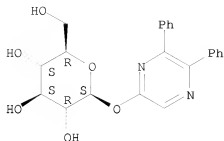
IT 4218-72-8P 4218-73-9P 17992-58-4P  
18309-61-0P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 4218-72-8 CAPLUS  
CN Pyrazine, 5-(β-D-glucopyranosyloxy)-2,3-diphenyl-,  
2',3',4',6'-tetraacetate (7CI, 8CI) (CA INDEX NAME)

Absolute stereochemistry.



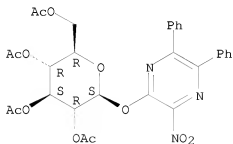
RN 4218-73-9 CAPLUS  
CN Pyrazine, 5-(β-D-glucopyranosyloxy)-2,3-diphenyl- (7CI, 8CI) (CA INDEX NAME)

Absolute stereochemistry.



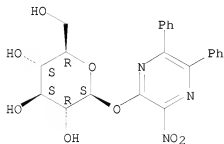
RN 17992-58-4 CAPLUS  
 CN Pyrazine, 2-( $\beta$ -D-glucopyranosyloxy)-3-nitro-5,6-diphenyl-,  
 2',3',4',6'-tetraacetate (8CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 18309-61-0 CAPLUS  
 CN Pyrazine, 2-( $\beta$ -D-glucopyranosyloxy)-3-nitro-5,6-diphenyl- (8CI) (CA  
 INDEX NAME)

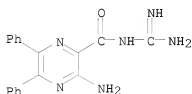
Absolute stereochemistry.



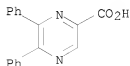
L14 ANSWER 331 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1967:500105 CAPLUS  
 DOCUMENT NUMBER: 67:100105  
 ORIGINAL REFERENCE NO.: 67:18835a,18838a  
 TITLE: Pyrazine diuretics. III. 5- and 6-alkyl,  
 -cyclo-alkyl, and -aryl derivatives of  
 N-amidino-3-aminopyrazinecarboxamides  
 Bicking, John B.; Robb, Charles M.; Kwong, Sara F.;  
 Cragoe, Edward J., Jr.  
 AUTHOR(S): Merck and Co. Inc., West Point, PA, USA  
 CORPORATE SOURCE: Journal of Medicinal Chemistry (1967), 10(4), 598-602  
 SOURCE: CODEN: JMCMAR; ISSN: 0022-2623



DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB cf. CA 63: 11561e; 66: 37887h. In evaluations of N-amidino-3-aminopyrazinecarboxamides as diuretics, a series of 5- and 6-alkyl-, -cycloalkyl, and -aryl derivs. was synthesized and studied for effects on renal electrolyte excretion. Several compds. reverse the electrolyte excretion effects of deoxycorticosterone acetate in the adrenalectomized rat, the most highly active being N-amidino-3-amino-6-methylpyrazinecarboxamide (I). 16 references.  
 IT 1634-20-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)  
 RN 1634-20-4 CAPLUS  
 CN Pyrazinecarboxamide, N-amidino-3-amino-5,6-diphenyl- (7CI, 8CI) (CA INDEX NAME)



L14 ANSWER 332 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1967:75973 CAPLUS  
 DOCUMENT NUMBER: 66:75973  
 ORIGINAL REFERENCE NO.: 66:14251a,14254a  
 TITLE: Alkyl- and aryl-substituted pyrazine carboxylic acids  
 AUTHOR(S): Felder, Ernst; Pitre, Davide; Boveri, Sergio; Grabitz, Ernst B.  
 SOURCE: Chemische Berichte (1967), 100(2), 555-9  
 CODEN: CHBEAM; ISSN: 0009-2940  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 OTHER SOURCE(S): CASREACT 66:75973  
 GI For diagram(s), see printed CA Issue.  
 AB 1,2-Diketones with H<sub>2</sub>NCH<sub>2</sub>CH(NH<sub>2</sub>)CO<sub>2</sub>H in NaOH-MeOH under air gave by oxidation of the intermediate dihydro derivative the corresponding substituted pyrazinecarboxylic acids (I).  
 IT 13515-07-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)  
 RN 13515-07-6 CAPLUS  
 CN 2-Pyrazinecarboxylic acid, 5,6-diphenyl- (CA INDEX NAME)

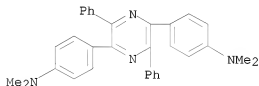


L14 ANSWER 333 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1966:64682 CAPLUS  
 DOCUMENT NUMBER: 64:64682

ORIGINAL REFERENCE NO.: 64:12088f-h  
 TITLE: Electrophotographic materials and their preparation  
 PATENT ASSIGNEE(S): Gevaert Photo-Producten N.V.  
 SOURCE: 7 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1004461		19650915	GB 1961-35828	19611004
PRIORITY APPLN. INFO.:			BE	19601004

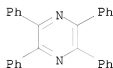
GI For diagram(s), see printed CA Issue.  
 AB A method is described for preparing electrophotographic materials comprising a photoconductive layer attached to a conductive base with the photoconductive layer containing at least one compound having the general formula I, where R1, R2, R3, and R4 are alkyl groups, aryl groups, hydroxy groups, or a heterocyclic radical, or where one of the pairs (R1 and R2 or R3 and R4) represents the necessary atoms to close an aromatic ring, a substituted aromatic ring, an aromatic polycyclic ring, or a substituted aromatic polycyclic ring system. Thus, a 3- $\mu$  layer is coated on a baryta paper by using a solution of Vinylaz A. A second coating is made by dip-coating with a solution containing 90 g. I (R1 = 4-Me2NC6H4, R2 = Ph, and R3 and R4 are benzo) and 0.9 g. of Rhodamine B (C.I. 45,170) in 200 cc. of dimethylformamide and 800 cc. of Me2CO. After drying, the sheet may be processed in the normal electrophotographic manner.  
 IT 7532-77-6, Pyrazine, 2,5-bis[p-(dimethylamino)phenyl]-3,6-diphenyl- (in photoconductive layer for electrophotography)  
 RN 7532-77-6 CAPLUS  
 CN Benzenamine, 4,4'-(3,6-diphenyl-2,5-pyrazinediyl)bis[N,N-dimethyl- (9CI) (CA INDEX NAME)]



L14 ANSWER 334 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1966:52037 CAPLUS  
 DOCUMENT NUMBER: 64:52037  
 ORIGINAL REFERENCE NO.: 64:9723f-h  
 TITLE: Synthesis of 2,5-difurylpyrazines  
 AUTHOR(S): Wiemann, Joseph; Vinot, Nicole; Villadary, Martine  
 CORPORATE SOURCE: Lab. Chim. Org. Struct., Paris  
 SOURCE: Bulletin de la Societe Chimique de France (1965), (12), 3476-8  
 CODEN: BSCFAS; ISSN: 0037-8968  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French  
 AB  $\alpha$ -Hydroxyfuryl ketones treated with NH4OAc in EtOH gave the corresponding 2,5-di(2-furyl)pyrazines. Et 2-furyl- $\alpha$ -hydroxymethyl ketone (I) (5 g.), 5 g. NH4OAc, and 100 cc. MeOH heated 12 hrs. at 120° in an autoclave and poured into 500 cc. H2O yielded 11% pale yellow 2,5-di(2-furyl)-3,6-diethylpyrazine (II). I (5 g.), 15 g. NH4OAc, and 100 cc. MeOH refluxed 45 min. with stirring gave 13% II. Furoin and 6

mole equivs. NH4OAc refluxed in MeOH gave 28% tetra(2-furyl)pyrazine (III), m. 185-6° (EtOH). A series of similar runs with varying mole equivs. N4HOAc was performed (mole equivalent NH4OAc used and % yield III given): 2.5, 12; 4, 22; 5, 27; 7, 26. Ph 2-furyl- $\alpha$ -hydroxymethyl ketone and NH4OAc yielded 40% pale yellow 2,5-di(2-furyl)-3,6-diphenylpyrazine, m. 259° (EtOH), and a small amount of tetraphenylpyrazine, m. 254°, formed from benzoin present in the starting material.

IT 642-04-6P, Pyrazine, tetraphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 335 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1965:432005 CAPLUS  
 DOCUMENT NUMBER: 63:32005  
 ORIGINAL REFERENCE NO.: 63:5739h,5740a-b  
 TITLE:  $\alpha$ -Amino- $\beta$ -hydroxypropionic acid  
 INVENTOR(S): Wolf, Jerzy; Wojciechowski, Jan; Polaczek, Lucyna  
 PATENT ASSIGNEE(S): Instytut Farmaceutyczny  
 SOURCE: 2 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 48569		19640928	PL	19630124

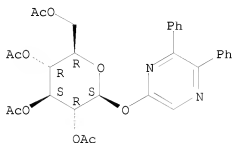
PRIORITY APPLN. INFO.: PL 19630124

AB The synthesis described by Gundermann and Rose (CA 53, 16947i) has been improved.  $\alpha,\beta$ -Dichloropropionitrile (I) was used for high yield preparation of the title compound but the method is simpler and metallic Na and chloroacrylonitrile need not be used in the synthesis. Thus, 48 g. NaOH dissolved in 250 ml. of MeOH was added at room temperature to a solution containing 124 g. of I in 100 ml. of MeOH. The mixture was stirred at 20-25° for 12 hrs., MeOH was removed by distillation at 50° for 0.5 hr., the oily residue was distilled in vacuo, and 79 g. of a fraction boiling at 71-82° under 11 mm. Hg was obtained. The ester (36 g.) and 100 ml. of 20% HCl were heated up to 100° for 0.5 hr., the mixture was cooled and extracted with ether. The extract was distilled under 0.3 mm. Hg. and 28 g. of  $\alpha$ , $\beta$ -chloro- $\beta$ -methoxypropionic acid boiling at 90-95° was obtained. The acid was dissolved in 300 ml. of 25% NH3, the solution was heated in an autoclave at 100° for 5 hrs., concentrated until a thick sirup was obtained, 150 ml. of 40% HBr was added, and the mixture was heated under reflux for 4 hrs. Next, the mixture was evaporated until a dry residue was obtained. The residue was purified by fractional crystallization from H2O, and I, m.p. 243° (with decomposition), was obtained in

a yield of 33.2%.

IT 4218-72-8P, Pyrazine, 5-( $\beta$ -D-glucopyranosyloxy)-2,3-diphenyl-,  
2',3',4',6'-tetraacetate  
RL: PREP (Preparation)  
(preparation of)  
RN 4218-72-8 CAPLUS  
CN Pyrazine, 5-( $\beta$ -D-glucopyranosyloxy)-2,3-diphenyl-,  
2',3',4',6'-tetraacetate (7CI, 8CI) (CA INDEX NAME)

Absolute stereochemistry.



L14 ANSWER 336 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1965:431973 CAPLUS  
DOCUMENT NUMBER: 63:31973  
ORIGINAL REFERENCE NO.: 63:5730g-h, 5731a  
TITLE: Synthesis of the O- and S-glucosides of hydroxy- and  
mercaptopyrazines and quinoxalines  
AUTHOR(S): Wagner, G.; Frenzel, H.  
CORPORATE SOURCE: Karl Marx Univ., Leipzig, Germany  
SOURCE: Zeitschrift fuer Chemie (1965), 5(3), 104-5  
CODEN: ZECEAL; ISSN: 0044-2402  
DOCUMENT TYPE: Journal  
LANGUAGE: German  
AB 2-Hydroxypyrazines, 2-hydroxyquinoxalines, 2-mercaptopyrazines, and  
2-mercaptoquinoxalines with substituents in position 6 reacted with  
tetra-O-acetyl- $\alpha$ -D-glucopyranosyl bromide (I) in the presence of  
NaOH in acetone-water-mixts. to give O- and S-, but no N-glucosides. No  
O-N- or S-N transglycosylation was observed after heating the glucosides  
with HgBr<sub>2</sub> in boiling toluene. The acetylated O-glucosides were also  
obtained by reaction of the silver salts with I in boiling toluene.  
Catalytic deacetylation with MeONa in absolute MeOH gave the free glucosides.  
The following compds. were described [m.p. and  $[\alpha]_{20D}$  (c 5 in CHCl<sub>3</sub>  
for the tetra-O-acetyl compds., c 2.5 in HCONMe<sub>2</sub> for the free glucosides  
given)]: 3,6-Diphenylpyrazine 2-O-(tetra-O-acetyl-D-glucoside),  
220-1°, -17.3°; 3,6-diphenylpyrazine 2-O-D-glucoside,  
220-2°, 289-91° (double m.p.), 3.6°;  
5,6-diphenylpyrazine 2-O-(tetra-O-acetyl-D-glucoside), 117-19°  
30.6°; 5,6-diphenylpyrazine 2-O-D-glucoside, --, 70.8°;  
5,6-diphenylpyrazine 2(S-tetra-O-acetyl-D-glucoside), 118-20°,  
29°; 5,6-diphenylpyrazine 2-S-glucoside, --, 53.9°;  
quinoxaline 2-O-tetra-O-acetyl-D-glucoside, 150-1° 2.1°;  
3-methylquinoxaline 2(O-tetra-O-acetyl-D-glucoside), 145-6°;  
11.3°; 3-methylquinoxaline 2-O-D-glucoside, 123-5°/170-  
2° (double m.p.), 4.8°; quinoxaline 2-S-(tetra-O-acetyl-D-  
glucoside), 140.5-1.5°, -13.6°; quinoxaline 2-S-glucoside,  
202-3°, -76.8°; 3-methylquinoxaline 2-S(tetra-O-acetyl-D-  
glucoside), 171-2°, -3.5°; and 3-methylquinoxaline  
2-S-glucoside, 215-16°, -67.1°.

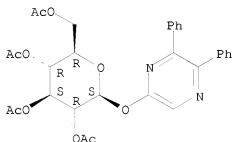
IT 4218-72-8

(Derived from data in the 7th Collective Formula Index (1962-1966))

RN 4218-72-8 CAPLUS

CN Pyrazine, 5-( $\beta$ -D-glucopyranosyloxy)-2,3-diphenyl-,  
2',3',4',6'-tetraacetate (7CI, 8CI) (CA INDEX NAME)

Absolute stereochemistry.



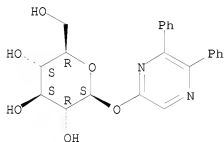
IT 4218-73-9P, Pyrazine, 5-( $\beta$ -D-glucopyranosyloxy)-2,3-diphenyl-  
RL: PREP (Preparation)

(preparation of)

RN 4218-73-9 CAPLUS

CN Pyrazine, 5-( $\beta$ -D-glucopyranosyloxy)-2,3-diphenyl- (7CI, 8CI) (CA  
INDEX NAME)

Absolute stereochemistry.



L14 ANSWER 337 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1965:431972 CAPLUS

DOCUMENT NUMBER: 63:31972

ORIGINAL REFERENCE NO.: 63:5730e-g

TITLE: Trifluoroacetyl as a protecting group for 1-halo  
sugars

AUTHOR(S): Newman, Howard

CORPORATE SOURCE: Am. Cyanamid Co., Princeton, NJ

SOURCE: Journal of Organic Chemistry (1965), 30(4), 1287-8

CODEN: JOCEAH; ISSN: 0022-3263

Journal

DOCUMENT TYPE:

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 63:31972

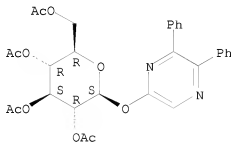
GI For diagram(s), see printed CA Issue.

AB Glycosidation of either cholesterol or cyclododecanol with  
2-O-trifluoroacetyl-3-N-methyltrifluoroacetamido-3,4,6-trideoxyglycosyl  
bromide (I) in (CH<sub>2</sub>Cl)<sub>2</sub> and Hg(CN)<sub>2</sub> gave the corresponding cholesteryl  
(II) and cyclododecyl glycosides (III). III left at room temperature with 7%  
K<sub>2</sub>CO<sub>3</sub> gave cyclo de-N-methylidososamine de and II with 10% NaOH/MeOH gave  
cholesteryl de-N-methylidososamine. I was prepared by the following  
sequence of reactions. Erythromycin was converted into Et desosaminide

(IV) by alc.-HCl. IV with ClCO2Et gave Et O, N-dicarbethoxy de-N-methyl-desosaminide (V). Hydrolysis of V to Et de-N-methyl-desosaminide followed by trifluoroacetylation gave Et O, N-bis(trifluoroacetyl)de-N-methyl-desosaminide (VI). VI with HBr in AcOH gave I.

IT 4218-72-8  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 4218-72-8 CAPLUS  
 CN Pyrazine, 5-(β-D-glucopyranosyloxy)-2,3-diphenyl-,  
 2',3',4',6'-tetraacetate (7CI, 8CI) (CA INDEX NAME)

Absolute stereochemistry.



L14 ANSWER 338 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1965:82636 CAPLUS  
 DOCUMENT NUMBER: 62:82636  
 ORIGINAL REFERENCE NO.: 62:14698f-h,14699a-h,14700a-h,14701a-h,14702a-b  
 TITLE: Substituted guanidines  
 INVENTOR(S): Cragoe, Edward J., Jr.  
 PATENT ASSIGNEE(S): Merck & Co., Inc.  
 SOURCE: 99 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 639386		19640430	BE	
			US	19621030

PRIORITY APPLN. INFO.:

GI For diagram(s), see printed CA Issue.

AB A suspension of 765 g. Me 3-aminopyrazinecarboxylate in 5 l. C6H6 was treated with 1.99 l. SO2Cl2, refluxed for 5 hrs., and left overnight at room temperature to give 888 g. crude Me 3-amino-5,6-dichloropyrazinecarboxylate (I), m. 233-4°. Into a solution of 100 g. I in 1 l. dry Me2SO dry NH3 was passed under stirring at 65-70° for 45 min., then at 10° for 1.25 hrs. to give 82.5 g. Me 3,5-diamino-6-chloropyrazinecarboxylate (II), m. 212-13°. A mixture of 14.2 g. II, 9 g. Pd-C, 4 g. MgO, and 250 ml. MeOH was shaken under H for 18 hrs. at room temperature to give Me 3,5-diaminopyrazinecarboxylate (III), m. 252-4° (decomposition) (iso-PROH). Bromination of a suspension of 2 g. III in 25 ml. AcOH at 50° with 2.1 g. Br in 10 ml. AcOH gave 1.2 g. Me 3,5-diamino-6-bromopyrazinecarboxylate (IV), m. 217-19°. Hg(OAc)2 (3.2 g.) and a solution of 2.5 g. iodine in 20 ml. warm dioxane was added rapidly to a suspension of 1.7 g. III in 30 ml. H2O at 70°, the mixture heated for 5 min., cooled to room temperature, and treated with 50 ml.

15%

KI solution precipitated 1.2 g. Me 3,5-di-amino-6-iodopyrazinecarboxylate, m.

200-2°. I (11.1 g.), 500 ml. iso-PrOH, 14.4 g. PhNH<sub>2</sub>, and 12.8 g. PhNH<sub>2</sub>.HCl was refluxed 24 hrs. under stirring to give 10 g. Me 3-amino-5-anilino-6-chloropyrazinecarboxylate, m. 171.5-73° (iso-PrOH). Similarly were prepared Me 3-amino-5-(p-chloroanilino)-6-chloropyrazinecarboxylate, m. 207-8° (MeCN), and Me 3-amino-5-dimethylamino-6-chloropyrazinecarboxylate (V), m. 145.5-6.5° (MeOH). A solution of 10 g. MeSH in 17 ml. 20% NaOH and 100 ml. MeOH was added to a boiling mixture of 17.7 g. I and 1 l. MeOH and refluxed 15 min. to precipitate 12 g. Me 3-amino-5-methylthio-6-chloropyrazinecarboxylate (VI), m. 212-16° (MeOH). VI (23.4 g.), 35 ml. 30% H<sub>2</sub>O<sub>2</sub>, and 300 ml. AcOH was stirred 18 hrs. at room temperature to give 18.5 g. the 5-methylsulfinyl analog (VII), m. 237.5-40.5° (decomposition) (MeOH-AcOEt-HCONH<sub>2</sub>). Hydrolysis of 7.5 g. VII in 75 ml. AcOH and 12 ml. H<sub>2</sub>O on a steam bath for 3 hrs. produced 3.7 g. Me 3-amino-5-hydroxy-6-chloropyrazinecarboxylate (VIII), m.  $\approx$ 245° (decomposition) (HCONH<sub>2</sub>-EtOH). Hydrogenation of VIII with Pd-C and MgO at room temperature resulted in Me 3-amino-5-hydroxypyrazinecarboxylate, decompose 220-60°. Also were prepared Me 3-amino-5-dimethylaminopyrazinecarboxylate, m. 242.5-3.5°, Me 3,5-diaminopyrazinecarboxylate, m. 252-4° (decomposition), and Me 3-amino-5-methoxypyrazinecarboxylate, m. 205.5-7.5°. A mixture of 8.9 g. I and 20 ml. PhCH<sub>2</sub>NH<sub>2</sub> was heated on a steam bath for 30 sec. to give 7.5 g. Me 3-amino-5-benzylamino-6-chloropyrazinecarboxylate (IX), m. 157-8° (MeOH). Hydrogenation of IX yielded Me 3-amino-5-benzylaminopyrazinecarboxylate, m. 189.5-91.5°. Treatment of 1.1 g. I with MeONa in 200 ml. boiling absolute MeOH produced 1 g. Me 3-amino-5-methoxy-6-chloropyrazinecarboxylate, m. 255-7° (MeCN). Na<sub>2</sub>S (9.6 g.) and 10 g. S was refluxed in 80 ml. absolute EtOH. Addition of

8.9

g. I at 25° and stirring for 1 hr. gave 7.8 g. Me 3-amino-5-mercapto-6-chloropyrazinecarboxylate, m. 207-8° (decomposition). To a refluxing solution of 4.44 g. I in 300 ml EtOH was

added

guanidine (from 1.98 g. guanidine-HCl) in 50 ml. absolute EtOH in 15 min. and the mixture refluxed 0.5 hr. to give 3.1 g. Me 3-amino-5-ethoxy-6-chloropyrazinecarboxylate, m. 123-5° (iso-PrOH).

3-Amino-6-methylpyrazinoylamide (31 g.) was heated 10 min. with 320 ml. 10% NaOH. The resulting Na salt of the acid (97 g.) was methylated with 77 g. Me<sub>2</sub>SO<sub>4</sub> in 700 ml. MeOH 19 hrs. at room temperature to give 18 g. Me 3-amino-6-methylpyrazinecarboxylate (X), m. 138.5-40.5° (C<sub>6</sub>H<sub>6</sub>). Chlorination of 9.2 g. X with 65 ml. SO<sub>2</sub>Cl<sub>2</sub> under cooling produced 4.4 g. Me 3-amino-5-chloro-6-methylpyrazinecarboxylate, m. 108.5-10.5° (C<sub>6</sub>H<sub>6</sub>-cyclohexane). A mixture of 30 g. 3-amino-5-methylpyrazinecarboxylic acid and a solution of 30% HCl in 650 ml. MeOH was stirred 42 hrs. at room temperature to give 15.4 g. Me 3-amino-5-methylpyrazinecarboxylate (XI), m. 165-7° (H<sub>2</sub>O). A solution of 4.18 g. Br in 3 ml. AcOH was added to a solution of 4.2 g. XI in 15 ml. AcOH in 20 min. to produce 3.6 g. Me 3-amino-5-methyl-6-bromopyrazinecarboxylate, m. 179-81°. Aminomalonamidamide-2HCl (52.5 g.) was added to an ice-cooled solution of 28.8 g. ethylglyoxal in 450 ml. H<sub>2</sub>O. The mixture was made alkaline with  $\approx$ 65 ml. concentrated NH<sub>4</sub>OH and left 20 hrs. at room temperature to precipitate 17.5 g.

3-amino-6-ethylpyrazinecarboxamide, m. 165.5-8.5° (iso-PrOH), which was saponified 30 min. on a steam bath with 10% NaOH to give 3-amino-6-ethylpyrazine-carboxylic acid (XII), m. 149-52°. Stirring 14 g. XII in a solution of 33% HCl in 160 ml. MeOH 24 hrs. at room temperature gave 4.3 g. XII Me ester, m. 85-7° (iso-PrOH). Also prepared were 3-amino-6-p-chlorophenylpyrazinecarboxylic acid, m. 207-13°, and its Me ester, m. 181.5-3.5°. To a suspension of 17.9 g. 5,6-diaminouracil in 250 ml. H<sub>2</sub>O at 60° 14.9 g. cyclohexylglyoxal-0.5 H<sub>2</sub>O was added and the mixture heated 1 hr. on a steam bath to give 7.5 g. 7-cyclohexyllumazine (XIII), m. 229-31° (aqueous

AcOH). A solution of 18.5 g. XIII and 9 g. NaOH in 90 ml. H<sub>2</sub>O was heated in an autoclave 17 hrs. at 105° to give 8 g. 3-amino-5-cyclohexylpyrazinecarboxylic acid, m. 182.5-3.5° (aqueous iso-PrOH); Me ester m. 173-4.5°. Similarly were prepared Me 3-amino-6-cyclohexylpyrazinecarboxylate, m. 126.5-28°, Me 3-amino-6-cyclopropylpyrazinecarboxylate, m. 112.5-14.5° (amide m. 185.5-7.5°, free acid m. 169-72°), Me 3-amino-5-phenylpyrazinecarboxylate (XIV), m. 231-2°, and Me 3-amino-6-phenylpyrazinecarboxylate (XV), m. 140-1°. Chlorination of 25.6 g. XV with 90 ml. SO<sub>2</sub>Cl<sub>2</sub> 1.5 hrs. at room temperature gave Me 3-amino-5-chloro-6-phenylpyrazinecarboxylate, m. 187.5-91.5° (AcOH). Bromination of 10.5 g. XIV in 700 ml. AcOH with 11.2 g. Br 21 hrs. at 85° gave 10.5 g. Me 3-amino-5-phenyl-6-bromopyrazinecarboxylate, m. 217-21° (AcOH). To a suspension of 103.59 g. 4,5-diamino-2,6-dihydroxypyrimidine in 1500 ml. H<sub>2</sub>O and 500 ml. concentrated NH<sub>4</sub>OH at 60° 103.71 g. 1-phenyl-1,2-propanedione was added and the mixture heated at 90° under vigorous stirring to give 82.4 g. 6(or 7)-methyl-7(or 6)-phenyllumazine, m. 281.5-2.5° (AcOH), and 32 g. 6(or 7)-phenyl-7(or 6)-methylumazine (XVI), m. 254.5-5.5°. Saponification of XVI with 8% NaOH in an autoclave 3.5 hrs. at 170° gave 3-amino-5(or 6)-phenyl-6(or 5)-methylpyrazinecarboxylic acid, m. 193.5-4.5°; Me ester m. 163-4° (MeOH). Similarly were prepared 3-amino-5(or 6)-methyl-6(or 5)-phenylpyrazine carboxylic acid, m. 155-6°; Me ester m. 162.5-3.5° (MeOH). Me 3-amino-6-phenylpyrazinecarboxylate was chlorinated with SO<sub>2</sub>Cl<sub>2</sub> to give Me 3-amino-5-chloro-6-phenylpyrazinecarboxylate, m. 187.5-90.5° (AcOH), and subsequently treated with Me<sub>2</sub>NH in MeOH to give Me 3-amino-5-dimethylamino-6-phenylpyrazinecarboxylate, m. 167.5-9.5° (MeOH). To 750 ml. AcOH and 3180 ml. H<sub>2</sub>O at 38°, 90 g. Me 3-aminopyrazinecarboxylate was added and Cl<sub>2</sub> passed through in 25 min. to give Me 3-amino-6-chloropyrazinecarboxylate (XVII) m. 142° (decomposition) (H<sub>2</sub>O). A solution of 18.8 g. XVII, 15 g. PhNH<sub>2</sub>, and 2.5 ml. concentrated HCl in 150 ml. Me<sub>2</sub>CO was refluxed 16 hrs. to give 7.4 g. Me 3-isopropylideneamino-6-anilino-6-phenylpyrazinecarboxylate, m. 195.5-7.5° (iso-PrOH). A mixture of 9.3 g. 3-amino-5,6,7,8-tetrahydroquinoxaline-2-carboxylic acid and 230 ml. absolute MeOH of 10° was treated with 30 ml. concentrated H<sub>2</sub>SO<sub>4</sub> in 1 hr. and left 24 hrs. at room temperature to give 1.6 g. the Me ester, m. 154-5° (1:5 MeOH-H<sub>2</sub>O). A solution of 60 g. 4-chloro-o-phenylenediamine in 60 ml. H<sub>2</sub>O and 50 ml. 12N HCl was treated with a solution of 61.44 g. alloxan-H<sub>2</sub>O in 100 ml. H<sub>2</sub>O and stirred 1 hr. at 90° to give a precipitate of 78.4 g. 8-chloroalloxazine, m. 365-6° and 40.36 g. 7-chloro-alloxazine, (XVIII) m. 380° (Me<sub>2</sub>SO). A mixture of 44.2 g. XVIII and 190 ml. concentrated NH<sub>4</sub>OH was heated in an autoclave 10 hrs. at 165° to give 27.2% 3-amino-7-chloroquinoxalin-2-carboxylic acid, m. 191-2° (decomposition); Me ester m. 224.5-5.5° (MeCN). Also prepared are the following XIX (R, R<sub>1</sub>, % yield, and m.p. given): Me, H, 88, 221-2°; Et, H, 89, 149-50°; Pr, H, 75, 138-40°; iso-Pr, H, 70, 125.5-6.5°; CH<sub>2</sub>:CHCH<sub>2</sub>, H, 69, 105-6.5°; Bu, H, 91, 140-2°; sec-Bu, H, 75, 106-8°; iso-Bu, H, 51, 113.5-15.5°; tert-Bu, H, 38, 98-108°; Am, H, 72, 100.5-2.5°; MePrCH, H, --, --; Et<sub>2</sub>CH, H, --, --; C<sub>6</sub>H<sub>13</sub>, H, 70, 72.5-5.5°; cyclopropylmethyl, H, 78, 132-3° cyclopropyl, H, 98, 167-9°; cyclopentyl, H, 93, 119.5-21.5°; PhCH<sub>2</sub>, H, 64, 157-8°; p-MeC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, H, 66, 112.5-14.5°; o-FC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, H, 84, 171-4°; p-ClC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, H, 93, 136-7°; PhCH<sub>2</sub>CH<sub>2</sub>, H, 59, 115-19°; CF<sub>3</sub>CH<sub>2</sub>, H, 97, 153-4° CF<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>, H, 76, 124.5-5.5°; HOCH<sub>2</sub>CH<sub>2</sub>, H, 100, 155-7°; HOCH<sub>2</sub>(CHOH)CH<sub>2</sub>, H, 60, 172-5°; NH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>, H, 96, 265°; Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>, H, 40, 257°; 4-pyridylmethyl, H, 69, 95-7°; 2-furylmethyl, H, 81, 148-9°; Me, Et, 73, 102-4°; Me, Pr, 58, 83.5-5.5°; Me, iso-Pr, 78, 75.5-7.5°; Me, CH<sub>2</sub>:CHCH<sub>2</sub>, 70, 90.5-92°; Me, Bu, 74, 59.5-61.5°; Et, Et, 54, 99-101°; Et, Pr, --, --; Et,



iso-Pr, --, --; Et, CH<sub>2</sub>:CHCH<sub>2</sub>, --, --; Et, Bu, 91, 77.5-9.5°; Pr, Bu, --, --; Pr, Pr, 66, 68.5-71.5°; (NRR1 = ) pyrrolidino, 95, 168-71°; (NRR1 = ) 1 (hexahydroazepinyl), 75, 109-11°; (NRR1 = ) N'-Methylpiperazino, 88, 186-8°; Me, NH<sub>2</sub>, 67, 136.5-38° Guanidine-HCl (XX) (26.3 g.) was added to a solution of MeONa (5.75 g. Na in 150 ml. absolute MeOH), the precipitated NaCl filtered off, and the filtrate concentrated to 30 ml. After addition of 11.5 g. V the mixture was boiled 1 min., then maintained 1 hr. at room temperature to give 93% (3-amino-5-dimethylamino-6-chloropyrazinecarbonyl) guanidine (XXa), m. 216-17°; HCl salt m. 298° (decomposition). Similarly were prepared (3,5-diamino-6-bromopyrazinecarbonyl)guanidine, m. 232.5-5.5° (decomposition), (3,5-diamino-6-iodopyrazinecarbonyl)guanidine-HCl, m. 273-4° (decomposition) and (3-isopropylideneamino-6-anilinopyrazinecarbonyl)guanidine, m. 214-16° (decomposition). To a solution of 920 mg. Na in 50 ml. absolute iso-PrOH 3.85 g. XX was added and the NaCl filtered off. Adding 4.4 g. I and refluxing the mixture 15 min. gave (3-amino-5,6-dichloropyrazinecarbonyl)guanidine HCl salt (XXb) m. 259-61°. The solution of XXb in 5 ml. HCONMe<sub>2</sub> was treated with 1 ml. 25% aqueous Me<sub>2</sub>NH 1 hr. on a steam bath to give XXa. Reaction of 11.1 g. I with 55 ml. Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>OH 20 min. on a steam bath gave 9.5 g. Me 3-amino-5-(2-dimethylamino-ethoxy)-6-chloropyrazinecarboxylate (XXI), m. 134.5-6.5° (C<sub>6</sub>H<sub>6</sub>-cyclohexane). To 20 g. XX in iso-PrONa (4 g. Na in 100 ml. iso-PrOH) 9.4 g. XXI was added and the mixture heated 30 min. on a steam bath to give 2.5 g. (3-amino-5-guanidino-6-chloropyrazinecarbonyl)guanidine-2HCl, m. >340°. A mixture of 2 1. concentrated NH<sub>4</sub>OH and 300 g. XVIII was stirred 16 hrs. at room temperature to give

260 g. 3-amino-6-chloropyrazinecarboxamide (XXII), m. 227-30°. HC(OEt)<sub>3</sub> (200 ml.) and 33 g. XXII refluxed in 200 ml. Ac<sub>2</sub>O 1.5 hrs. gave 20 g. 4-hydroxy-6-chloropteridine (XXIII), m. 268-70° (decomposition) (iso-PrOH). A solution of 5.5 g. XXIII and 4.4 g. PhCH<sub>2</sub>SH in 100 ml. 4% NaOH was heated 30 min. on a steam bath to give 5.5 g. 4-hydroxy-6-benzylthiopteridine, m. 233-5° (aqueous iso-PrOH), which was converted into 3-amino-6-benzylthiopyrazinecarboxylic acid (XXIV), m. 138-9°, by 8 hrs. hydrolysis with 5% NaOH. XXIV (8.5 g.) in 50 ml. Ac<sub>2</sub>O was heated 5 hrs. on a steam bath to give 6.6 g. 2-methyl-6-benzylthio-4H-pyrazino[2,3-d][1,3]oxazin-4-one (XXV), m. 116.5-18.5° (C<sub>6</sub>H<sub>6</sub>). To 1 g. Na in 30 ml. iso-PrOH 5 g. XX and 3.4 g. XXV were added to give, after 1 hr. at room temperature, 1.1 g. (3-amino-6-benzylthiopyrazinecarbonyl)guanidine, m. 171-3° (decomposition). Similarly were prepared 4-hydroxy-6-methylthiopteridine, m. 289.5-91.5° (aqueous iso-PrOH), 3-amino-6-methylthiopyrazinecarboxylic acid (XXVI), m. 182-4° (decomposition) (AcOEt), 2-methyl-6-methylthio-4H-pyrazino[2,3-d][1,3]oxazin-4-one, m. 189-91° (C<sub>6</sub>H<sub>6</sub>), and 3-acetamido-6-methylthiopyrazinecarbonyl)guanidine (XXVII), m. 220-2°. Addition of HCl to XXVII in H<sub>2</sub>O gave 86% (3-amino-6-methylthiopyrazinecarbonyl)guanidine, m. 203-5°. A solution of 0.92 g. XXVI in 15 ml. 2.5% NaOH was treated with 1.05 g. KMnO<sub>4</sub> in 35 ml. H<sub>2</sub>O to give 0.5 g. 3-amino-6-methylsulfonylpyrazine-carboxylic acid, m. 239-42° (decomposition) (iso-PrOH), which gave, after 5 hrs. heating in Ac<sub>2</sub>O, 2-methyl-6-methylsulfonyl-4H-pyrazino[2,3-d][1,3]oxazin-4-one, m. 214-16° (Me<sub>2</sub>CO), transformed into 27% 3-amino-6-methylsulfonylpyrazinecarbonyl)guanidine, m. 224-6° (decomposition) (iso-PrOH). Similarly are prepared the following XXVIIa (R, R<sub>1</sub>, % yield, and m.p. given): H, H, 93, 240.5-1.5°; 293.5° (HCl salt); Me, H, 89, 238-9°; Et, H, 63, 217-18°; Pr, H, 93, 221-2°; iso-Pr, H, 75, 215°; CH<sub>2</sub>:CHCH<sub>2</sub>, H, 84, 213-14°; Bu, H, 65, 219.5°; Me-ETCH, H, 74, 208-9°; iso-Bu, H, 76, 221°; tert-Bu, H, 84, 222-3°; Am, H, 70, 215-16°; MePrCH, H, 89, 186.5-8.5°; Et<sub>2</sub>CH, H, 82, 209-11°; C<sub>6</sub>H<sub>13</sub>, H, 100, 194.5-6.5°; cyclopropylmethyl, H,

95, 220-1°; cyclopropyl, H, 85, 213-15°; cyclopentyl, H, 65, 219-20°; PhCH<sub>2</sub>, H, 44, 206-9°; p-MeC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, H, 57, 216-17°; o-FC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, H, 100, 206-8°; p-ClC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, H, 96, 225-6°; PhCH<sub>2</sub>CH<sub>2</sub>, H, 57, 199-202°; CF<sub>3</sub>CH<sub>2</sub>, H, 77, 232-3°; CF<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>, H, 65, 221-2.5°; HO-CH<sub>2</sub>CH<sub>2</sub>, H, 63, 272-3°; HOCH<sub>2</sub>(CHOH)CH<sub>2</sub>, H, 68, 223-4°; NH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>, H, 68, 311°; Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>, H, 98, 192.4-4.5°; 4-pyridylmethyl, H, 64, 239-40°; o-furylmethyl, H, 92, 217-18°; Ph, H, 95, 246.5-8.5°; p-ClC<sub>6</sub>H<sub>4</sub>, H, 95, 276-8°; Me, Et, 92, 229-30°; Me, Pr, 97, 214-15°; Me, iso-Pr, 70, 207-8°; Me, CH<sub>2</sub>:CHCH<sub>2</sub>, 95, 207-8°; Me, Bu, 95, 208-9°; Et, Et, 75, 215°; Et, Pr, 92, 224-5°; Et, iso-Pr, 75, 207-8°; Et, CH<sub>2</sub>:CHCH<sub>2</sub>, 92, 208-9°; Et, Bu, 98, 200.5-1.5°; Pr, Pr, 100, 221-2°; Pr, Bu, 84, 215-17°; (NRR1 =) pyrrolidino, 90, 244.5-5.5°; (NRR1 =) 1-hexahydroazepinyl, 49, 224-5°; (NRR1 =) N-methylpiperazino, 74, 299-300°; Me, NH<sub>2</sub>, 92, 234°.

Also prepared are the following XXVIIb (X, Y, % yield, and m.p. base and n.p. HCl salt given): H, HO, 10, >310° (decomposition); H, NH<sub>2</sub>, 8, 286-8° (decomposition), --; H, NMe<sub>2</sub>, 45, 224-5° (decomposition), --; H, MeO, 52, --, 229-30° (decomposition); H, PhCH<sub>2</sub>NH, 56, --, 231-7° (decomposition); Cl, MeO, 90, --, 257°; Cl, MeS, 100, 234.5-6.5°; --; Cl, HO, 24, --, >300° (decomposition); Cl, SH, 100, 236.5°; --; Cl, EtO, 81, 215-16°; --; Cl, Cl, 72, --, 259-61°; Me, H, 87, 218-19 (decomposition), --; Me, Me<sub>2</sub>N, 42, --, 262° (decomposition) (di-HCl); H, Me, 13, 210° (decomposition), --; Me, Me, 38, 245° (decomposition), --; Br, Me, 35, 288° (decomposition), --; Et, H, 53, 207.5-9.5° (decomposition), --; H, cyclohexyl, 71, 221-2° (decomposition), --; cycloheptyl, H, 61, 228-30° (decomposition), --; cyclopropyl, H, 61, 196.5-99° (decomposition), --; H, Ph, 51, 224-6° (decomposition); Ph, H, 34, 194.5-5.5° (decomposition), --; Ph, Ph, 87, 234.5-5.5°, --; Ph, Cl, 69, 214-16° (decomposition), --; Br, Ph, 66, 234-6° (decomposition), --; p-ClC<sub>6</sub>H<sub>4</sub>, H, 70, 282-5° (decomposition), --; Me (or Ph), Ph (or Me), 77, 212-13° (decomposition), --; Ph (or Me), Me (or Ph) 90, 218-19° (decomposition), --; Ph, Me<sub>2</sub>N, 40, 205-6° (decomposition), --; (XY =) (CH<sub>2</sub>)<sub>4</sub>, 29, 220-1°, --; (XY =) CH:CHCH:CH, 56, 211-13°, --; (XY =) HC:CClCH:CH, 70, 246-7° (decomposition), --. A solution of 13.9 g. 2-methyl-2-pseudothiuronium sulfate (XXVIII) and 9.2 g. H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>OH in 40 ml. H<sub>2</sub>O was heated 20 min. to give 12.5 g. (2-hydroxyethyl)guanidine sulfate, m. 127.5-35.5°, which was added to a solution of 2g. Na in 25 ml. MeOH, MeOH distilled, and the residue treated with 4.1 g. II 5 min. on steam bath to give 1.2 g. 1-(3,5-diamino-6-chloropyrazinoyl)-3-(2-hydroxyethyl)guanidine-HCl, m. 228.5-9.5° (aqueous iso-PrOH). 1-(3-Amino-5-isopropylamino-6-chloropyrazinoyl)-3-(2-hydroxyethyl)guanidine-HCl. 0.5H<sub>2</sub>O, m. 185-6° (decomposition), was prepared from Me 3-amino-5-isopropylamino-6-chloropyrazinecarboxylate. A mixture of 6.1 g. II, 6.8 g. phenylguanidine, and 3 ml. iso-PrOH was heated 6 hrs. to give 1-(3,5-diamino-6-chloropyrazinoyl)-3-phenylguanidine, isolated as the MeSO<sub>3</sub>H salt, m. 272° (decomposition) (H<sub>2</sub>O). Ph-CH<sub>2</sub>NH<sub>2</sub> (80.3 g.) and 69.5 g. XXVIII in 200 ml. H<sub>2</sub>O kept 18 hrs. at room temperature gave benzylguanidine sulfate, which was converted into the HCl salt (XXIX) (51.5 g.), m. 175-8° (aqueous EtOH), by treating its aqueous solution with aqueous BaCl<sub>2</sub>. To a solution of 1 g. Na in 30 ml. iso-PrOH 9.3 g. XXIX was added and half the volume distilled. Addition of 2 g. II and heating the mixture 15 min. yielded 1 g. 1-(3,5-diamino-6-chloropyrazinoyl)-3-benzylguanidine, m. 215-16° (decomposition) (aqueous iso-PrOH). With the appropriate starting materials the following 3-substituted 1-(3,5-diamino-6-chloropyrazinoyl)guanidines were prepared [3-substituent and m.p. (decomposition) given]: p-fluorobenzyl 216-19.5°; α-methylbenzyl 153-60°; 3-pyridylmethyl, 280.5-3.5°; 2-naphthylmethyl

243.5-5.5°. Also prepared were the following RR1-NC(:NH)NH2.HCl (R, R1, % yield, and m.p. given): p-Me-C6H4CH2 H, 28, 153-5°; o-ClC6H4CH2, Me, 32, 122.5-5.5°; PhCH2, H, 71, 131-6°; p-ClC6H4CH2, H, 55, 162.5-4.5°; p-MeOC6H4CH2, H, 69, 132-7°; 2,4-Me2C6H3CH2, H, 52, 105-15°; 2,4-Cl2C6H3CH2, H, 67, 145-8°; 3,4-Cl2C6H4CH2, H, 77, 155-7°; PhCH2CH2, H, 71, 135-8°.

Also prepared were the following XXIXa [R, R1, % yield, and m.p. (decomposition) given]: p-MeC6H4CH2, H, 27, 210-12°; PhCH2, Me, 35, 274.5° (HCl salt); o-ClC6H4CH2, H, 39, 220-3°; p-ClC6H4CH2, H, 46, 204-6° p-MeOC6H4CH2, H, 27, 175.5-9.5°; 2,4-Me2C6H3CH2 H, 59, 220-2°; 2,4-Cl2C6H3CH2, H, 30, 267.5-70.5° (HCl salt); 3,4-Cl2C6H3CH2, H, 47, 216-19°; PhCH2CH2, H, 46, 219-21.5°. To a solution of 2.3 g. Na in 200 ml. absolute MeOH 15 g. dimethyl-guanidine sulfate was added, the mixture refluxed

1 hr. and cooled, Na2SO4 filtered off, the solution concd, to 30 ml., 10.15 g. II added, and the mixture heated 30 min. and kept 1 hr. at room temperature to give 3.6 g. 1-(3,5-diamino-6-chloropyrazinoyl)-3,3-dimethyl-guanidine (XXX), decomposing at 240° HCl salt m. 275° (decomposition). To a solution of 36.57 g. Et2NH in 100 ml. H2O and 41 ml. concentrated HCl adjusted, with 3.66 g. Et2NH to pH 9.2 a solution of 50% aqueous cyanamide (65.16 g.) was added dropwise at 100° in 4 hrs. After refluxing 1 hr. and standing over night at room temperature the mixture was treated with 50 ml. of

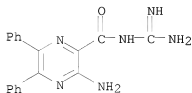
40% NaOH and CO2 passed through under cooling to give 1,1-diethylguanidine, isolated as the HCl salt (XXXI) (35 g.), m. 147-9°. Similarly, 1,1-dibutylguanidine-HCl (XXXII), m. 104.5-106° (H2O), was obtained in 86% yield. The following compds. were also prepared: 88.6% 1-(3,5-diamino-6-chloropyrazinoyl)-3,3-diethylguanidine, m. 265° (decomposition), from II and XXXI and 72% 1-(3,5-diamino-6-chloropyrazinoyl)-3,3-dibutylguanidine, m. 148-9° (iso-PrOH), from II and XXXII. Also prepared were the following XXXIII (R, R1, % yield, and m.p. given): iso-Pr, H, 35, 238.5-40°; CH2=CHCH2, H, 39, 215°; Bu, H, 17, 187.5°; cyclopropylmethyl, H, 3, 196-7°; Me, Me, 69, 219°; Me, Et, 49, 218°; Me, iso-Pr, 61, 209-11°; Et, Et, 40, 214°. The compds. are effective in the treatment of abnormal electrolyte excretion.

IT 1634-20-4P, Pyrazinecarboxamide, N-amidino-3-amino-5,6-diphenyl-  
RL: PREP (Preparation)

(preparation of)

RN 1634-20-4 CAPLUS

CN Pyrazinecarboxamide, N-amidino-3-amino-5,6-diphenyl- (7CI, 8CI) (CA INDEX NAME)



L14 ANSWER 339 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1965:36872 CAPLUS

DOCUMENT NUMBER: 62:36872

ORIGINAL REFERENCE NO.: 62:6495b-h, 6496a-b

TITLE: Preparation of pyrazinylacetic acid derivatives

INVENTOR(S): Akkerman, Antony M.; Kofman, Hendrik; de Vries, George

PATENT ASSIGNEE(S): N. V. Nederlandse Combinatie voor Chemische Industrie  
 SOURCE: 5 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
NL 105432		19630715	NL	19590805
PRIORITY APPLN. INFO.:			NL	19590805

GI For diagram(s), see printed CA Issue.

AB The title compds. (I) show sedative and anticonvulsive activity. I are prepared by the reaction of a suitably substituted 2-halopyrazine and an alkali metal derivative of II in an anhydrous organic solvent, or in liquid

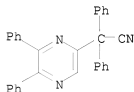
NH3.

Thus, a solution of 38.8 g. Ph2CHCN (III) in 75 ml. PhMe is added at ambient temperature and with stirring to a suspension of 11.7 g. NaNH2 in 40 ml. PhMe, the mixture refluxed 2 hrs. under stirring and cooled to 70°, 34.8 g. 2-chloropyrazine added dropwise, and the mixture refluxed 3-5 hrs. to give 46% I (R = Ph, Z = CN, R1 = Y = R2 = R3 = R4 = H) (IV), m. 100-2° (MeOH). To 150 ml. concentrated H2SO4 at 90° is added, under stirring, 25 g. IV and the mixture kept 12 hrs. at this temperature to give 73% I (R =

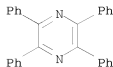
Ph, Z

= CONH2, R1 = Y = R2 = R3 = R4 = H), m. 200-1° (MeOH). Similarly, 11.7 g. NaNH2, 57.9 g. III, and 28.5 g. 2-chloro-3-ethylpyrazine gives 25% I (R = Ph, Z = CN, R3 = Et, R1 = Y = R2 = R4 = H), m. 118-21° (MeOH), and 11.7 g. NaNH2, 57.9 g. III, and 39.9 g. 2-chloro-5,6-dimethylpyrazine gives 42% I (R = Ph, Z = CN, R1 = R2 = Me, R4 = Y = R3 = H), m. 130.5-32° (MeOH). NaNH2 (39 g.), 117 g. PhCH2CN, and 50 g. 2-chloropyrazine gives 80% I (Z = CN, R = R1 = Y = R2 = R3 = R4 = H) (V), m. 132-3° (MeOH). To a suspension of 10.8 g. NaNH2 in 40 ml. dioxane is added, under stirring, a solution of 4.99 g. V in 150 ml. dioxane, the mixture refluxed 4 hrs. and cooled to 15°, a solution of 39 g. MeI in 25 ml. dioxane added, and the mixture heated 1 hr. at 85° to give 76% I (Z = CN, R = Me, R1 = Y = R2 = R3 = R4 = H) (VI), b1 150-6°, n20D 1.5743. V is hydrolyzed in concentrated H2SO4 to give 52.5% I (Z = CONH2, R = R1 = Y = R2 = R3 = R4 = H), m. 162-4° (C6H6), and VI gives 80% I (Z = CONH2, R = Me, R1 = Y = R2 = R3 = R4 = H), m. 131-2° (C6H6). From 18.7 g. NaNH2, 90 g. 4-MeOC6H4CHPhCN and 55.2 g. 2-chloropyrazine is obtained 48% I (R = Ph, Z = CN, Y = MeO, R1 = R2 = R3 = R4 = H), m. 105-8° (MeOH), which is hydrolyzed in HCl to give 55.6% carboxamide analog, m. 124-6° (C6H6-petr. ether, or H2O). From 18.7 g. NaNH2, 91.2 g. 4-ClC6H4CHPhCN and 55.2 g. 2-chloropyrazine is obtained 57% I (Z = CN, R = Ph, Y = Cl, R1 = R2 = R3 = R4 = H), m. 105-8° (MeOH). A mixture of 161 g. 4-MeC6H4CH2CN and 110 g. NaNH2 in 2.5 l. C6H6 is stirred with cooling under N, heated to 50°, kept 15 min., and cooled, 150 g. 2-chloropyrazine added dropwise below 35°, and the mixture heated to 45-50°, cooled, and treated with 120 ml. MeOH and 250 ml. 4N HCl below 30° to give 62% I (Z = CN, Y = Me, R = R1 = R2 = R3 = R4 = H) (VII), m. 123-5° (MeOH); hydrolysis in concentrated H2SO4 gives 78% I (Z = CONH2, Y = Me, R = R1 = R2 = R3 = R4 = H), m. 138-9° (C6H6). Treating 21 g. VII with 4.07 g. NaNH2 and 10 ml. MeI gives 80% I (Z = CN, R = Y = Me, R1 = R2 = R3 = R4 = H), b2 170-1°. From 7.8 g. NaNH2, 18.9 g. pyrrolidinocarbonylmethylbenzene, and 11.4 g. 2-chloropyrazine is obtained 58% I (Z = pyrrolidinocarbonyl, R = R1 = Y = R2 = R3 = R4 = H), m. 118-20°. To 300 ml. liquid NH3 is added 23 g. Na, and a solution of 89 g. 3,4-(MeO)2C6H3CH2CN and 69 g. 2-chloropyrazine in 250 ml. Et2O and 300 ml. dioxane is added over 2.5 hrs. under stirring below -40°. This temperature is kept 30 min., and then increased to ambient. The solution is kept overnight, heated 30 min. at 40°, then ice-cooled and 32 ml. MeOH and 20 ml. H2O is added to give 35% I (Z = CN, Y = R4 =

MeO, R = R1 = R2 = R3 = H), m. 124-6°(MeOH). The tabulated I (R3 = R4 = H) are also obtained.  
 IT 1108-60-7P, Pyrazineacetonitrile,  $\alpha,\alpha,5,6$ -tetraphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 1108-60-7 CAPLUS  
 CN Pyrazineacetonitrile,  $\alpha,\alpha,5,6$ -tetraphenyl- (7CI, 8CI) (CA INDEX NAME)



L14 ANSWER 340 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1965:2377 CAPLUS  
 DOCUMENT NUMBER: 62:2377  
 ORIGINAL REFERENCE NO.: 62:378f-h  
 TITLE: Thermal and oxidation stability of high-temperature functional fluids  
 AUTHOR(S): Behun, John D.; Kan, Peter T.  
 CORPORATE SOURCE: Wyandotte Chem. Corp., Wyandotte, MI  
 SOURCE: Am. Chem. Soc., Div. Petrol. Chem., Preprints (1963), 8(2), C117-C136  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The development of some small-scale tests for thermal and oxidation stability evaluation of high temperature functional fluids is described. A distinction is made between durability to prolonged exposure at constant temperature (kinetic stability) and maximum allowable exposure temperature (thermodynamic stability).  
 Methods for screening for both types of thermal stability are described. A detailed description is given of the influence of variables in a small-scale oxidation, stability test. The significance of determining the air flow rate dependence of the oxidation of materials to distinguish outstanding oxidation stability is emphasized. Examples are cited of the use of these small-scale test procedures in a program of synthesis of new high-temperature functional fluids. Model compds., intermediates, and new candidate fluids based on pyrazine were evaluated. The results of these tests illustrated the high thermal and oxidation stability of the pyrazine ring and the dependence of the stability of pyrazine derivs. upon the substituents attached to this nucleus.  
 IT 642-04-6, Pyrazine, tetraphenyl-  
 (oxidation and thermal stability of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 341 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1963:462097 CAPLUS

DOCUMENT NUMBER: 59:62097

ORIGINAL REFERENCE NO.: 59:11413b-h,11414a-b

TITLE: The structure of streptonigrin

AUTHOR(S): Rao, Koppaka V.; Biemann, K.; Woodward, R. B.

CORPORATE SOURCE: Chas. Pfizer & Co., Maywood, NJ

SOURCE: Journal of the American Chemical Society (1963), 85(16), 2532-3

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

AB The structure of the title compound (I) was deduced. Catalytic hydrogenation of I, followed by treatment with Me<sub>2</sub>SO<sub>4</sub> and K<sub>2</sub>CO<sub>3</sub> in Me<sub>2</sub>CO gave II (R = Me, R' = CO<sub>2</sub>Me), m. 185-6°, mol. weight 592.2553 (mass spectrometry). Use of (CD<sub>3</sub>)<sub>2</sub>SO<sub>4</sub> in place of Me<sub>2</sub>SO<sub>4</sub> in the preceding reaction gave III (R = CD<sub>3</sub>, R' = CO<sub>2</sub>CD<sub>3</sub>), m. 185-6°. Alkaline hydrolysis of II (R = Me, R' = CO<sub>2</sub>Me) gave II (R = Me, R' = CO<sub>2</sub>H), m. 215-16°. II (R = Me, R' = CO<sub>2</sub>H) was volatilized into mass spectrometer and showed evolution of CO<sub>2</sub> and II (R = Me, R' = H). Oxidation of I with alkaline H<sub>2</sub>O<sub>2</sub> gave III (R = R' = H), m. 210-15° (decomposition); III (R = R' = Me), m. 166-7°. Oxidation of III (R = R' = H) with alkaline KMnO<sub>4</sub> gave IV (R = H, R' = NH<sub>2</sub>), m. >300°; IV (R = Me, R' = NH<sub>2</sub>) m. 145-6°; nuclear magnetic resonance (n.m.r.) 1.06, 1.22, 1.64, 1.80, 2.16, 7.42  $\tau$  (CDCl<sub>3</sub>). IV (R = Me, R' = NH<sub>2</sub>) was treated with HNO<sub>3</sub>Et<sub>2</sub>O to give IV (R = Me, R' = H), m. 143-4°. Alkaline hydrolysis of IV (R = Me, R' = H) gave IV (R = R' = H), m. 165° (decomposition). Decarboxylation of IV (R = R' = H) over soda lime at 350° gave 5-methyl-2,2'-bipyridyl (V), m. approx. 5°. Alkaline KMnO<sub>4</sub> oxidation of 3-methyl-1,10-phenanthroline gave 5-methyl-3,3'-dicarboxy-2,2'-bipyridyl (VI). Decarboxylation of VI gave V. IV (R = H, R' = NH<sub>2</sub>) was oxidized with NaOCl to give pyridine-2,3,6-tricarboxylic acid (VII). Decarboxylation of VII gave pyridine-2,5-dicarboxylic acid. Hydrogenation of IV (R = H, R' = NH<sub>2</sub>) over Pt in aqueous-EtOH-HCl, oxidation with alkaline

KMnO<sub>4</sub>, and distillation from soda lime gave 3-amino-5-methylpyridine,  $\lambda$  234, 300 m $\mu$  (MeOH); n.m.r., 2.08, 3.20, 5.90, 7.83  $\tau$  (CDCl<sub>3</sub>). Alkaline hydrolysis of III (R = R' = Me) gave III (R = H, R' = Me), m. 205-7°. Oxidation of III (R = H, R' = Me) with hot alkaline KMnO<sub>4</sub> gave 2,3,4-trimethoxybenzoic acid. Reaction of III (R = R' = Me) with HNO<sub>3</sub>-Et<sub>2</sub>O gave VIII, m. 186-7°. Similar reaction of III (R = Me, R' = CD<sub>3</sub>) gave VIII. Treatment of I with Me<sub>2</sub>SO<sub>4</sub> and K<sub>2</sub>CO<sub>3</sub> in Me<sub>2</sub>CO gave C<sub>27</sub>H<sub>26</sub>N<sub>4</sub>O<sub>8</sub> (IX), m. 230-2°. Reaction of IX with H<sub>2</sub>NOH gave a material, m. 202-4°, which was reduced by Na<sub>2</sub>S<sub>2</sub>O<sub>6</sub> in aqueous EtOH to a diamino compound (X). Reaction of X with diacetyl gave XI, m. 260-2°. Oxidation of XI with KMnO<sub>4</sub> in hot pyridine gave XII (R = CO<sub>2</sub>Me, R' = CO<sub>2</sub>H), m. 160-2° (decomposition) XII (R = R' = CO<sub>2</sub>Me), m. 260-2°. Hydrolysis of XII (R = CO<sub>2</sub>Me, R' = CO<sub>2</sub>H) with aqueous-EtOH KOH gave XII (R = R' = CO<sub>2</sub>H), m. 193-5° (decomposition). Decarboxylation of XII (R = R' = CO<sub>2</sub>H) at 250° gave XII (R = R' = H), m. 192-4°; n.m.r. singlets at 0.93 and 1.98  $\tau$ , and an ABC pattern (JAB  $\approx$  2 cycles/sec. (c.p.s.) JAC = JBC  $\approx$  8 c.p.s.) at 1.35, 1.38, 1.47, 1.50, 1.72, 1.75, 1.85, 1.88, 1.98, 2.11, 2.23  $\tau$  (CDCl<sub>3</sub>). The presence of the common structural unit XIII in I, mitomycin C, porfiromycin, and the actinomycins was noted with regard to their anticancer activity.

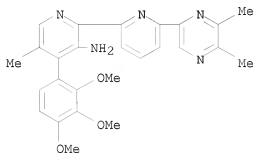
IT 96068-17-6P, Pyrazine, 5-[6-[3-amino-5-methyl-4-(2,3,4-trimethoxyphenyl)-2-pyridyl]-2-pyridyl]-2,3-dimethyl- 96269-78-2P, Pyrazinecarboxylic acid, 3-[6-[3-amino-6-carboxy-5-methyl-4-(2,3,4-trimethoxyphenyl)-2-pyridyl]-3-carboxy-2-pyridyl]-5,6-dimethyl-

97573-09-6P, Pyrazinecarboxylic acid, 3-[6-[3-amino-6-carboxy-5-methyl-4-(2,3,4-trimethoxyphenyl)-2-pyridyl]-3-carboxy-2-pyridyl]-5,6-dimethyl-, trimethyl ester 106844-29-5P, Pyrazinecarboxylic acid, 3-[6-[3-amino-6-carboxy-5-methyl-4-(2,3,4-trimethoxyphenyl)-2-pyridyl]-3-carboxy-2-pyridyl]-5,6-dimethyl-, 2,6-dimethyl ester  
 RL: PREP (Preparation)

(preparation of)

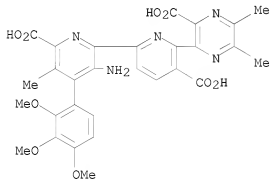
RN 96068-17-6 CAPLUS

CN Pyrazine, 5-[6-[3-amino-5-methyl-4-(2,3,4-trimethoxyphenyl)-2-pyridyl]-2-pyridyl]-2,3-dimethyl- (7CI) (CA INDEX NAME)



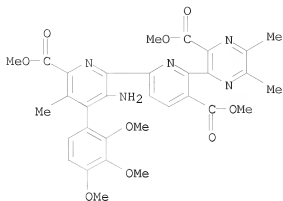
RN 96269-78-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-[6-[3-amino-6-carboxy-5-methyl-4-(2,3,4-trimethoxyphenyl)-2-pyridyl]-3-carboxy-2-pyridyl]-5,6-dimethyl- (7CI) (CA INDEX NAME)

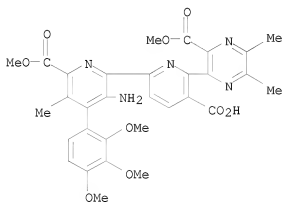


RN 97573-09-6 CAPLUS

CN Pyrazinecarboxylic acid, 3-[6-[3-amino-6-carboxy-5-methyl-4-(2,3,4-trimethoxyphenyl)-2-pyridyl]-3-carboxy-2-pyridyl]-5,6-dimethyl-, trimethyl ester (7CI) (CA INDEX NAME)

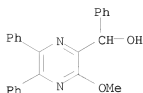


RN 106844-29-5 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-[6-[3-amino-6-carboxy-5-methyl-4-(2,3,4-trimethoxyphenyl)-2-pyridyl]-3-carboxy-2-pyridyl]-5,6-dimethyl-, 2,6-dimethyl ester (7CI) (CA INDEX NAME)



L14 ANSWER 342 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1963:428532 CAPLUS  
 DOCUMENT NUMBER: 59:28532  
 ORIGINAL REFERENCE NO.: 59:5158a-b  
 TITLE: N-Acyl derivatives of barbiturates. I. Benzoyl derivatives  
 AUTHOR(S): Bojarski, Jacek; Kahl, Wladyslaw; Melzacka, Mirosława  
 CORPORATE SOURCE: Akad. Med., Krakow, Pol.  
 SOURCE: Roczniki Chemii (1962), 36, 1259-62  
 CODEN: ROCHAC; ISSN: 0035-7677  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 AB By heating BzCl 6 hrs. with Ag salts of the resp. barbituric acids in C6H6 solution and in the presence of metallic Na, the following N- and N,N-dibenzoyl derivs. were prepared: 1,3-dibenzoyl-5,5-diallyl- (m. 156-7°), 1,3-dibenzoyl-5-cyclohexenyl-5ethyl- (m. 162-3°); 1,3-dibenzoyl-5,5-diethyl- (n. 235-6°); 1-methyl-3-benzoyl-5-phenyl-5ethyl- (m. 95-6°); and 1,5-dimethyl-3-benzoyl-5-cyclohexenylbarbituric acid (m. 108-10°).  
 IT 95489-49-9  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 95489-49-9 CAPLUS





L14 ANSWER 343 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1963:428531 CAPLUS

DOCUMENT NUMBER: 59:28531

ORIGINAL REFERENCE NO.: 59:5157d-h,5158a

TITLE: Synthesis of several derivatives of

phenyl(2-hydroxypyrazinyl)carbinol

Venturella, Vincent S.; Bianculli, J. A.; Sager, R. W.

AUTHOR(S): Univ. of Pittsburgh, PA

CORPORATE SOURCE: Journal of Pharmaceutical Sciences (1963), 52, 142-6

SOURCE: CODEN: JPMSAE; ISSN: 0022-3549

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 59:28531

GI For diagram(s), see printed CA Issue.

AB three-PhCH(OH)CH(NH<sub>2</sub>)CO<sub>2</sub>Me (I) (0.036 mole), m. 162-3.5° (decomposition), in 300 ml. ethanolic NH<sub>3</sub> at 0° was kept at room temperature for 72 hrs. to give 36% erythro- $\beta$ -phenylserine amide, m. 191-3°. I (15 g.) in absolute MeOH-NH<sub>3</sub> at 0° shaken for 60 hrs. at room temperature gave 3.0 g.  $\alpha$ -aminocinnamamide, m. 122-3° (MeOH, C<sub>6</sub>H<sub>6</sub>). I.HCl (0.022 mole) treated with excess KHCO<sub>3</sub> solution, the solution extracted with EtOAc, the extract dried, cooled, treated with 5 g.

KHCO<sub>3</sub> and 3 g. PhCH<sub>2</sub>O<sub>2</sub>CCl, the suspension stirred in ice for 4 hrs., 15 ml. dry C<sub>5</sub>H<sub>5</sub>N added, the mixture washed with H<sub>2</sub>O, dilute HCl, and H<sub>2</sub>O, the organic

layer dried, and evaporated to 1/2 volume in vacuo gave 73.5% N-carbobenzoxo-threo- $\beta$ -phenylserine methyl ester (II), m. 91.5-93° (EtOAc). II (2.5 g.) in 100 ml. absolute MeOH-NH<sub>3</sub> kept at room temperature 40 hrs. gave

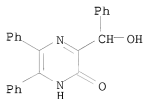
2.1 g. N-carbobenzoxo-threo- $\beta$ -phenylserine amide (III), m. 159-60° (MeOH-H<sub>2</sub>O). III (2 g.) in 100 ml. MeOH reduced in a steady stream of H over Pd until CO<sub>2</sub> evolution ceased, the mixture flushed with N, filtered through Celite, the filtrate evaporated, and the residue dried over CaCl<sub>2</sub> gave 90.5% threo-PhCH(OH)CH(NH<sub>2</sub>)CONH<sub>2</sub>. (IV), m. 144-5° (MeOH-petr. ether). IV (5 g.) in 50 ml. absolute MeOH at -20° treated with 7 g. 30% aqueous (CHO)<sub>2</sub> and 6 ml. 12N NaOH dropwise, the suspension stirred 3 hrs. at -20°, 2 hrs. at room temperature, and acidified with concentrated HCl at 15°. The mixture diluted with 10 ml. H<sub>2</sub>O and kept at -20° for 40 hrs. gave 39.4% IVa (R = R<sub>1</sub> = R<sub>2</sub> = H).HCl (V), m. 203-4.5° (decomposition) [EtOH(C)-Et<sub>2</sub>O]. Similarly, 0.034 mole IV and 0.032 mole AcCHO followed by neutralization (pH 6.8) with concentrated HCl gave 46.5% IVa (R =

R<sub>2</sub> = H, R<sub>1</sub> = Me) (VI), m. 174-6° (decomposition) (Me<sub>2</sub>CO); 0.02 mole IV and 0.03 mole Ac<sub>2</sub> gave 33% IVa (R = R<sub>1</sub> = Me, R<sub>2</sub> = H) (VII), m. 181.5-83° (decomposition) (20% aqueous MeOH). IV (0.028 mole), 50 ml. absolute MeOH, and 0.028 mole Bz<sub>2</sub> refluxed and treated dropwise with 4.85 ml. 12N NaOH, the mixture refluxed 30 min., cooled, acidified with concentrated HCl, 1

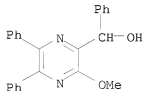
g. KHCO<sub>3</sub> added, the suspension cooled to 0°, filtered, and the residue

washed with H<sub>2</sub>O gave 65.8% IVa (R = R<sub>1</sub> = Ph, R<sub>2</sub> = H) (VIII), m. 213 16° (decomposition) (BuOH). V (0.5 g.) in dilute NaOH treated with equimolar Me<sub>2</sub>SO<sub>4</sub> at 0°, refluxed 1 hr., refrigerated at 5°, and filtered gave 0.185 g. IVa (R = R<sub>1</sub> = H, R<sub>2</sub> = Me), m. 140-2° (H<sub>2</sub>O). Similarly, 2 g. VI gave 0.115g. IVa (R = H, R<sub>1</sub> = R<sub>2</sub> = Me), m. 134.5-6.5°; 0.4 g. VII gave 0.048 g. IVa (R = R<sub>1</sub> = R<sub>2</sub> = Me), m. 110-11.5° (Et<sub>2</sub>O-petr. ether); 2 g. VIII gave 0.035 g. IVa (R = R<sub>1</sub> = Ph, R<sub>2</sub> = Me), m. 94.5-6° (decomposition) (aqueous MeOH). IVa are shown to exist predominantly as the pyrazone tautomer and the 2-pyrazinyl position is hindered by the 3-phenylcarbinol moiety.

IT 95225-26-6P, Pyrazinemethanol, 3-hydroxy- $\alpha$ ,5,6-triphenyl-  
 95489-49-9P, Pyrazinemethanol, 3-methoxy- $\alpha$ ,5,6-triphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 95225-26-6 CAPLUS  
 CN Pyrazinemethanol, 3-hydroxy- $\alpha$ ,5,6-triphenyl- (7CI) (CA INDEX NAME)



RN 95489-49-9 CAPLUS  
 CN Pyrazinemethanol, 3-methoxy- $\alpha$ ,5,6-triphenyl- (7CI) (CA INDEX NAME)



L14 ANSWER 344 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1963:428518 CAPLUS  
 DOCUMENT NUMBER: 59:28518  
 ORIGINAL REFERENCE NO.: 59:5151d-g  
 TITLE: Some transformations of heterocyclic systems containing the imidazole ring. III. The action of bases on salts of N-methylN'-2,4-dinitrophenylimidazolium ion  
 AUTHOR(S): Simonov, A. M.; Garnovskii, A. D.; Sheinker, Yu. N.; Khristich, B. I.; Trofimova, S. S.  
 CORPORATE SOURCE: State Univ., Rostov-on-Don  
 SOURCE: Zhurnal Obshchei Khimii (1963), 33(2), 571-9  
 CODEN: ZOKHA4; ISSN: 0044-460X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 GI For diagram(s), see printed CA Issue.  
 AB cf. CA 54, 9896a; 55, 27278h. 4,5-Diphenylimidazole and 2,4-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>Cl in 0.5 hr. at 170° gave 33% 1-(2,4-dinitrophenyl)4,5-diphenylimidazole (I), m. 201-2°; dinitrobenzene gave the same product at 110-15°. Fusion of 2-methyl-4,5-diphenylimidazole with 2,4-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>Cl at 190° gave 53% red-orange 1-(2,4-dinitrophenyl)-2-

methyl-4,5diphenylimidazole, m. 242-3°. Tetrahydrobenzimidazole similarly gave with dinitrochlorobenzene in the presence of NaOAc in 5 hrs. 60% 1-(2,4-dinitrophenyl)-4,5,6,7-tetrahydrobenzimidazole, m. 164-5°. I and p-MeC6H4SO3Me at 140° gave the quaternary salt (II), forming a dihydrate, m. 114-15°; anhydrous salt m. 126-7°. This heated with PhNH2 1 hr. at 100° gave 2,4-(O2N)2C6HNNHPh and 1-methyl-4,5-diphenylbenzimidazole. Similarly was prepared 1-(2,4-dinitrophenyl)-2,3-dimethyl-4,5-diphenylimidazolium p-toluenesulfonate, m. 98-9° (dihydrate), m. 121-2° (anhydrous), which with PhNH2 also gave 2,4-(O2N)2C6H3NNHPh. II and 10% NH4OH gave in 5-6 hrs. yellow N-methyl-N-formyl-N'-(2,4-dinitrophenyl)-, alpha;, alpha;' - diaminostilbene, decomposed 201-2°, which refluxed 2 hrs. in concentrated HCl gave benzil, MeNH2, and a solid, m. 212-13°. Similarly was prepared 50% green-yellow N-methyl-N-acetyl-N'-(2,4-dinitrophenyl)alpha;,alpha;'-diaminostilbene, m. 188-9°, which with alc. HCl 4 hrs. gave 2,4-(O2N)2C6H3NH2 and benzil. 1-(2,4-dinitrophenyl)3-methyl-4,5,6,7-tetrahydrobenzimidazolium p-toluenesulfonate, m. 226-7°, was prepared as shown above; treated with aqueous Na2CO3 40 min. at 60° it gave N-methyl-N-formyl-N'-(2,4-dinitrophenyl)-1,2-diaminocyclohexene, m. 196-7°. alpha;-Aminodeoxybenzoin and 2,4-(O2N)2C6H3Cl in 0.5 hr. at 100° gave alpha;-(2,4-dinitrophenylamino)deoxybenzoin, m. 189-90°, which heated with alc. HCl 2 hrs. gave 2,3,5,6-tetraphenylpyrazine, m. 249-50°, and benzil. Thus, salts of the N-dinitrophenylimidazolium ion undergo opening of the benzimidazole ring with greater difficulty than do the benzimidazole analogs. Infrared spectra of the products are shown for confirmation of structures of products formed by alkaline treatment of the quaternary salts above.

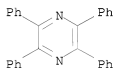
IT 642-04-6P, Pyrazine, tetraphenyl-

RL: PREP (Preparation)

(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 345 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1963:33380 CAPLUS

DOCUMENT NUMBER: 58:33380

ORIGINAL REFERENCE NO.: 58:5674h,5675a-f

TITLE: 1,2,4-Triazoles. VI. Synthesis of some s-triazolo[4,3-a]-pyrazines

AUTHOR(S): Nelson, P. J.; Potts, K. T.

CORPORATE SOURCE: Univ. Adelaide

SOURCE: Journal of Organic Chemistry (1962), 27, 3243-8

CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 58:33380

GI For diagram(s), see printed CA Issue.

AB cf. CA 57, 12472e. A series of s-triazolo[4,3-a]pyrazines was synthesized by ring closure of 2-hydrazinopyrazines with orthoesters, a method superior to that of acidic cyclodehydration. The following modified procedure was used in the preparation of 2-hydroxypyrazine (I). The mixts. from 3 runs were evaporated and I separated and purified by extraction in a Soxhlet

apparatus I (40% yield) m. 181-5° (CHCl<sub>3</sub>). 2-Hydroxy-5,6-diphenylpyrazine (75 g.), 275 ml. POCl<sub>3</sub>, 75 g. PCl<sub>5</sub>, and several drops of concentrated H<sub>2</sub>SO<sub>4</sub> refluxed 20 days gave 75 g. 2-chloro-5,6-diphenylpyrazine,

m.

126-7°. The following general method of preparing 2-hydrazinopyrazines was followed: The crude 2-chloropyrazine (0.1 mole), 16 ml. 98% N<sub>2</sub>H<sub>4</sub>, and 50 ml. alc. was refluxed 4 hrs., the alc. evaporated, and the solid recrystd. from C<sub>6</sub>H<sub>6</sub>. 2-Hydrazinopyrazine (6.6 g.), m. 108-10°, after further purification m. 112-13°; picrate m. 155-6° (decomposition). 2,3-Dimethyl-6-hydrazinopyrazine was obtained in 54% yield, m. 119-20°; picrate m. 169-70°. 2,3-Diphenyl-6-hydrazinopyrazine (17.2 g.), obtained as above, m. 151-3°; picrate m. 157° (decomposition). The general method of preparing II was as follows: the 2-hydrazinopyrazine (1 g.), 3 ml. of the ortho ester, and 10 ml. xylene was refluxed 4 hrs., the mixture evaporated, and the resulting II recrystd. The picrates were formed from C<sub>6</sub>H<sub>6</sub>. The following II were thus obtained (3,5,6 substituents, m.p., % yield, solvent, and m.p. picrate given): H, H, H, 194-5°, 75, MeOH, 177° (decomposition); H, Me, Me, 190°, 55, C<sub>6</sub>H<sub>6</sub>-ligroine, 136-7°; H, Ph, Ph, 187-8°, 72, C<sub>6</sub>H<sub>6</sub>-ligroine, 145-6°; Me, H, H, 239°, 78, MeOH. 156-7°; Me, Me, Me, 126-7°, 55, ligroine, 134-5°; Me, Ph, Ph, 200-1°, 43, C<sub>6</sub>H<sub>6</sub>-ligroine, 158-9°; Et, H, H, 158°, 70, C<sub>6</sub>H<sub>6</sub>, 100-1°; Et, Me, Me, 93-4°, 52, C<sub>6</sub>H<sub>6</sub>-ligroine, 127-8°; Et, Ph, Ph, 234-5°, 50, C<sub>6</sub>H<sub>6</sub>-ligroine, 132-3°. 2,3-Diphenyl-6-chloropyrazine (1 g.), 2 g. benzhydrazide (III), 4 g. PhOH, and a trace of PhONa refluxed 10 days gave after chromatography on Al<sub>2</sub>O<sub>3</sub> 3,5-diphenyl-1,2,4-triazole, m. 187-9°. In another experiment carried out on a smaller scale the first product isolated was 0.15 g. of prisms, m. 94-5°, believed to be 2,3-diphenyl-6-phenoxy-pyrazine. When 2,3-dimethyl-6-chloropyrazine was treated as above, 2,5-diphenyl-1,3,4-oxadiazole was isolated, m. 135-6°. 2-Chloropyrazine (1 g.) treated as above with 1.2 g. III gave 0.45 g. dibenzoylhydrazine, m. 234-5°. 2,3-Diphenyl-6-hydrazinopyrazine (1 g.) and 15 ml. 98% HCO<sub>2</sub>H refluxed 3 hrs., the solution evaporated, and the residue crystallized gave 0.1 g.

5,6-diphenyl-s-triazolo[4,3-

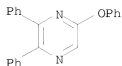
alpyrazine (IV). Heating 2-hydrazinopyrazine with HCO<sub>2</sub>H under the same conditions or at 70° gave a carbonaceous product. 2,3-Diphenyl-6-hydrazinopyrazine (0.5 g.) and 20 ml. HCONMe<sub>2</sub> refluxed 18 hrs. gave 0.5% IV, m. 187-8°. N-Benzoyl-2,3-diphenyl-6-hydrazinopyrazine (V), m. 189-90°, was obtained in 89% yield by 15 hr. treatment of the corresponding hydrazine with BzCl. V (0.5 g.) and 5 ml. POCl<sub>3</sub> refluxed 2 hrs. gave 7 mg. 3,5,6-triphenyl-s-triazolo[4,3-alpyrazine, m. 238-9°. V (0.4 g.) and 1 g. PhOH heated 18 hrs. gave 0.12 g. unchanged V. 2,3-Diphenyl-6-hydrazinopyrazine (1 g.), 2 ml. Ac<sub>2</sub>O, and 2 ml. AcOH refluxed 2.5 hrs. gave Va, m. 178-9°. The hydrazinopyrazine (1 g.), in 6 ml. C<sub>5</sub>H<sub>5</sub>N treated dropwise with 0.4 ml. AcCl, kept 1 hr. at room temperature, and isolated gave 0.85 g. 1,2-diacetyl-1-(2,3-diphenyl-6-pyrazinyl)-hydrazine (VI), m. 167-8°. VI was obtained from the above triacetyl derivative 2,3-Diphenyl-6-hydrazinopyrazine (1 g.), 2 ml. CS<sub>2</sub>, and 10 ml. C<sub>5</sub>H<sub>5</sub>N refluxed 7 hrs. gave 1,3-bis(5,6-bisphenyl-2-pyrazinylamino)thiourea, m. 239-40°. The above hydrazine (1 g.), 0.7 g. PhNCS, and 5 ml. trichlorobenzene refluxed 5 hrs. gave 5,6-diphenyl-s-triazolo[4,3-alpyrazine, m. 187-8°.

IT 95160-80-8P, Pyrazine, 5-phenoxy-2,3-diphenyl-  
RL: PREP (Preparation)

(preparation of)

RN 95160-80-8 CAPLUS

CN Pyrazine, 5-phenoxy-2,3-diphenyl- (7CI) (CA INDEX NAME)



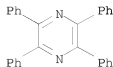
L14 ANSWER 346 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1963:14918 CAPLUS  
 DOCUMENT NUMBER: 58:14918  
 ORIGINAL REFERENCE NO.: 58:2460d-f  
 TITLE: Electrophotographic material containing organic photoconductive compounds  
 PATENT ASSIGNEE(S): Gevaert Photo-Producten N.V.  
 SOURCE: 13 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 595696		19610201	BE	19601004
PRIORITY APPLN. INFO.:			BE	19601004

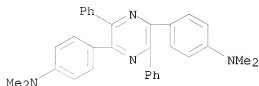
AB The photoconductive substances in the photoconductive layer of an electrophotographic material consists for at least 80% of a pyrazine derivative such as 2-hydroxy-3-phenacylquinoxaline (I), 2,5-bis(p-dimethylaminophenyl)-3,6-diphenylpyrazine (II), 2-(p-dimethylaminophenyl)-3-phenylquinoxaline, 2,3-bis(p-methoxyphenyl)quinoxaline, 2,3-bis(p-hydroxyphenyl)quinoxaline, 2,3-di(2-benzyl)quinoxaline, dibenzo[a,c]phenazine, benzo[a]naphtho[2,1-c]phenazine, dibenzo[a,h]dinaphtho[2,1-c:2',1'-j]phenazine (III), and 2,3,5,6-tetraphenylpyrazine. I, m. above 260°, is prepared by refluxing during 2 hrs. 22 g. 1-ethoxalylacetophenone, 10.8 g. o-phenylenediamine, and 200 cc. HOAc, cooling the solution, filtering off the crystals, and drying. II, m. above 260°, is prepared by refluxing 4 hrs. 25.5 g. p-dimethylaminobenzoic acid, and 200 g. H4NOAc in 500 cc. HOAc, cooling, filtering off the yellow precipitate, and washing with HOAc. III, m. above 260°, can also be prepared by mixing thoroughly 5.16 g. chrysoquinone and 7.56 g. HCO2NH4, heating at 185° on an oil bath, cooling, treating the black mixture with boiling H2O, drying the residue, and crystallizing from Tetralin. The usual optical sensitizers can be added to increase the sensitivity of the electrophotographic material. In another way, the quinoxalines and pyrazines cited above can be added as sensitizers to a photoconductive layer which is substantially composed of a photoconductive polymer.

IT 642-04-6P, Pyrazine, tetraphenyl- 7532-77-6P, Pyrazine, 2,5-bis[p-(dimethylamino)phenyl]-3,6-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)

RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7532-77-6 CAPLUS  
 CN Benzenamine, 4,4'-(3,6-diphenyl-2,5-pyrazinediyl)bis[N,N-dimethyl- (9CI)  
 (CA INDEX NAME)



L14 ANSWER 347 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1962:404044 CAPLUS  
 DOCUMENT NUMBER: 57:4044  
 ORIGINAL REFERENCE NO.: 57:842e-1,843a-c  
 TITLE: 2-Substituted pyrazines  
 INVENTOR(S): de Jongh, David Karel; Akkerman, Antonic M.; Kofman, Hendrik; Vries, George de  
 PATENT ASSIGNEE(S): N. V. Nederlandsche Combinatie voor Chemische Industrie  
 SOURCE: 5 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1101425		19610309	DE 1959-N16940	19590703
GB 893391			GB	
GB 893392			GB	
US 3006918		1961	US	
PRIORITY APPLN. INFO.:			NL	19580705

AB The title compds. were prepared by the reaction of a substituted 2-halopyrazine with the alkali derivative of a phenylacetone nitrile or of a phenylacetamide. Diphenylacetone nitrile (I) (38.8 g.) in 75 cc. PhMe was treated with 11.7 g. NaNH<sub>2</sub> in 40 cc. PhMe, the mixture refluxed 2 hrs., cooled to 70°, and treated dropwise with 34.8 g. 2-chloropyrazine (II). The mixture was refluxed 3-5 hrs., cooled, diluted with 6 cc. MeOH and 10 cc. H<sub>2</sub>O, and extracted with concentrated HCl. The aqueous phase was extracted with C<sub>6</sub>H<sub>6</sub>, concentrated, diluted, and made alkaline with Na<sub>2</sub>CO<sub>3</sub> to give 46% α,α-diphenyl-2-pyrazineacetone nitrile (III), m. 100-2°. Similarly prepared were [starting nitrile, substituents of starting pyrazine, substituents of α-(2-pyrazine)acetone nitrile produced, % yield, m.p. given]: I, 3-chloro-2-ethyl, α,α-diphenyl-3-ethyl, 25, 118-21°; I, 2-chloro-5,6-dimethyl, 5,6-dimethyl, α,α-diphenyl, 42, 130.5-2°; I, 2-chloro-5,6-diphenyl, α,α-diphenyl-5,6-diphenyl, 55, 192-4°; PhCH<sub>2</sub>CN, 2-chloro, α-phenyl (IV), 80, 132-3°; α-(4-methoxyphenyl)-α-phenylacetone nitrile, 2-chloro, α-(4-methoxyphenyl)-α-phenyl, 48, 105-8°; α-(4-chlorophenyl)-α-phenylacetone nitrile, 2-chloro, α-(4-chlorophenyl)-α-phenyl, 57, 105-8°; α-(4-fluorophenyl)-α-phenylacetone nitrile, 2-chloro, α-(4-fluorophenyl)-α-phenyl, 41.5, 83-4°; α-phenyl-α-(2-thienyl)acetone nitrile, 2-chloro, phenyl-α-(2-thienyl), 50, 78-9°; α-cyclohexyl-α-phenylacetone nitrile, 2-chloro, α-cyclohexyl-α-phenyl (V), 61, 103-4° and 144°; 4-methylbenzyl cyanide, 2-chloro, α-(4-methylphenyl) (VI), 62,

123-5°; 4-methoxybenzyl cyanide, 2-chloro,  $\alpha$ -(4methoxyphenyl) (VII), 26.7, 136-8°; 4-chlorobenzylcyanide, 2-chloro,  $\alpha$ -(4-chlorophenyl) (VIII), 44, 110-11°; 4-fluorobenzyl cyanide, 2-chloro,  $\alpha$ -(4-fluorophenyl) (IX), 12, 99.5101°. Similarly prepared from II were (starting material, product, % yield, and m.p. given): phenylacetopyrrolidide, phenyl-2-pyrazineacetopyrrolidide, 58, 118-20°; N, N-dimethylphenylacetamide, N,N-dimethyl- $\alpha$ -phenyl- $\alpha$ -(2-pyrazine)acetamide, 23, 111-13°; N,N-diethylphenylacetamide, N,N-diethyl- $\alpha$ -phenyl- $\alpha$ -(2-pyrazine)acetamide, 21, 71-3°. 3,4-Dimethoxyphenylacetoneitrile and II in Et<sub>2</sub>O and dioxane with Na-NH<sub>3</sub> gave 35%  $\alpha$ -(3,4-dimethoxyphenyl)- $\alpha$ -(2-pyrazine)acetoneitrile, m. 124-6°. IV was treated in dioxane with NaNH<sub>2</sub> under reflux 4 hrs., cooled, and treated with MeIn dioxane. The solution was heated 1 hr. to give 73%  $\alpha$ -methyl- $\alpha$ -phenyl- $\alpha$ -(2-pyrazine)acetoneitrile (X), bl 150-6°, n<sub>D</sub>20D 1.5743. Similarly prepared from IV were the corresponding compds. (halogen compound, product % yield, m.p. given): EtI (XI), 65, 45-7°; PrBr (XII), 40, 66-8°; iso-PrBr, 46, 56-8°; PhCH<sub>2</sub>Cl, 68, 71-5°; cyclohexyl bromide, 29, 103-4° and 144°; allyl chloride, 17.5, 47.5-9.5°; propargyl bromide, 28, 96.5-8.5°. Similarly prepared using MeI were  $\alpha$ -(4chlorophenyl)- $\alpha$ -methyl- $\alpha$ -(2-pyrazine)acetoneitrile (XIII), 70%, m. 70-1, and  $\alpha$ -(4-methylphenyl)- $\alpha$ -methyl- $\alpha$ -(2pyrazine)acetanitrile (XIV), 80%, m. 170-1°. III was heated in concentrated H<sub>2</sub>SO<sub>4</sub> at 90° 12 hrs. to give  $\alpha$ , $\alpha$ -diphenyl- $\alpha$ -(2-pyrazine)acetamide, 73%, m. 200-1°. Similarly prepared were (starting nitrile, amide % yield, m.p. given): X, 80, 131-3°; XI, 56, 87-9°; XII, 95, 92-5°. Treatment of the nitrile with H<sub>2</sub>SO<sub>4</sub> at room temperature 18-40 hrs. gave (starting nitrile, amide % yield,

m.p.

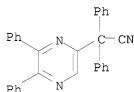
given): IV, 52.5, 162-4°; VI, 78, 138-9°; VIII, 96, 149.5-50.5°; IX, 54, 136.5-7.5°; XIII, 91, 152.5-3.5°; XIV, 83, 151°. VII with concentrated HCl at room temperature gave 55.6%  $\alpha$ -(4-methoxyphenyl)- $\alpha$ -(2pyrazine)acetamide, m. 124-6°. The title compds. had sedative and anticonvulsive action on the central nervous system.

IT 1108-60-7P, Pyrazineacetoneitrile,  $\alpha$ , $\alpha$ ,5,6-tetraphenyl-  
RL: PREP (Preparation)

(preparation of)

RN 1108-60-7 CAPLUS

CN Pyrazineacetoneitrile,  $\alpha$ , $\alpha$ ,5,6-tetraphenyl- (7CI, 8CI) (CA  
INDEX NAME)



L14 ANSWER 348 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1962:7697 CAPLUS

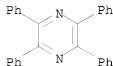
DOCUMENT NUMBER: 56:7697

ORIGINAL REFERENCE NO.: 56:1447d-f

TITLE: Reaction of the O- and N-methyl derivatives of  
aromatic ketoximes with carbon monoxide and hydrogen  
Rosenthal, Alex

AUTHOR(S):  
CORPORATE SOURCE: Univ. Brit. Columbia, Vancouver

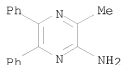
SOURCE: Canadian Journal of Chemistry (1960), 38, 2025-8  
 CODEN: CJCHAG; ISSN: 0008-4042  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 OTHER SOURCE(S): CASREACT 56:7697  
 AB Benzophenone was refluxed with O-methylhydroxylamine, pyridine, and EtOH 4 hrs. to prepare O-methylbenzophenone oxime, m. 60-1°, which was mixed with dicobalt octacarbonyl and benzene and treated with CO and H at 2300 lb./sq. in. at 220° for 70 min. to prepare 3-phenylphthalimidine, m. 219 ± 1°. Tetraphenylpyrazine, m. 252-3° was similarly prepared from  $\alpha$ -benzil N,N'-dimethyldioxime after chromatographic separation  
 IT 642-04-6P, Pyrazine, tetraphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 349 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1961:131316 CAPLUS  
 DOCUMENT NUMBER: 55:131316  
 ORIGINAL REFERENCE NO.: 55:24762c-1,24763a-c  
 TITLE: Synthesis and properties of iodopyrazines  
 AUTHOR(S): Hirschberg, Albert; Spoerri, Paul E.  
 CORPORATE SOURCE: Polytech. Inst. of Brooklyn, Brooklyn, NY  
 SOURCE: Journal of Organic Chemistry (1961), 26, 1907-12  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 OTHER SOURCE(S): CASREACT 55:131316  
 AB The lack of reactivity of chloro- and bromopyrazines towards the preparation of organometallic derivs. stressed the desirability of preparing 2-iodopyrazines (I). Using a MeCOEt solution of NaI and HI, it was possible to prepare eight members of I, by displacement of the Cl from variously substituted chloropyrazines, in 30-60% yield. Treatment of the isodiazotate salt of 2-amino-3,6-dimethylpyrazine (II) with HI, according to a procedure described by Chichibabin (C. and Rjazancev, CA 10, 2898) for the preparation of iodopyridine, afforded 2-amino-3,6-dimethyl-5-iodopyrazine (III). Similarly, the isodiazotate salt of 2-amino-3-methylpyrazine (IV) afforded 2-amino-3-methyl-5-iodopyrazine (V). It could be demonstrated that the isodiazotate salts were reduced to the corresponding amines, which in the subsequent workup were iodinated. The isodiazotate salt of aminopyrazine (VI) afforded iodopyrazine but in poor yield. 2-Aminopyrazines. A mixture of 0.02 mole of the appropriate halopyrazine and 80 ml. 28% NH4OH heated 30 hrs. at 200° in a steel autoclave, cooled to 0°, saturated with NaOH pellets, extracted with Et2O, the exts. dried, evaporated, and in the 2 cases where the residues were oils, crystallization induced by cooling. The residues were recrystd. from either C6H6-ligroine or alc. The following 2-aminopyrazines were thus obtained (3, 5, 6 substituents, m.p., % yield given): H, H, H, 117-18°, 70; Me, H, H, 166-7°, 64; Me, H, Me, 111-13°, 68; Et, H, H, 56-7°, 68; Me, Me, H, 94-5°, 17; H, Me, Me, 146-8°, 43; H, Ph, Ph, 224-5°,



61; Ph, Ph, Ph, 150-1°, 79. Pyrazine isodiazotates. The approp. aminopyrazine (0.1 mole) in Et2O refluxed 15 hrs. with 0.39 g. NaNH2 in 50 ml. Et2O, the mixture refluxed 8 hrs. with 0.01 mole of freshly prepared isoamyl nitrite, the residue washed with Et2O, extracted in a Soxhlet apparatus with Et2O, the residue dried, and stored until ready for use gave the following yields for the Na isodiazotates (3, 5, 6, substituents, % yield, and % yield of derived hydroxypyrazine given): H, H, H, 51, 42; Me, H, H, 49, 72; Me, H, Me, 67, 66; Et, H, H, 30, 69. The approp. isodiazotate (0.5-1.0 g.) in 10 ml. H2O added slowly to 25 ml. 40% H2SO4, the solution adjusted to pH 6, the salts removed, the filtrate and washings evaporated, the resulting residue extracted with Me2CO, and the extract evaporated gave the derived hydroxypyrazines. The following results were obtained (compound, m.p., and recrystn. solvent given): hydroxypyrazine, 185-7°, alc.; 2-hydroxy-3-methylpyrazine, 148-50°, EtOAc; 2-hydroxy-3,6-dimethylpyrazine, 210-11°, BuOAc; 2-hydroxy-3-ethylpyrazine, 102-3°, C6H6-pentane. NaOH (1.2 g.) in 50 ml. H2O treated with 2.54 g. iodine, then refluxed 1 hr. with 1.23 g. II, extracted with Et2O, evaporated, and the residue washed and recrystd gave 1.8 g. III, crystals, m. 129-30° (isooctane). The isodiazotate salt of II (1.4 g.) in 10 ml. H2O added at 0° to 15 ml. 57% HI, the mixture stirred 0.5 hr. at 0-5°, heated 0.5 hr. on the steam bath, cooled, made basic, extracted with Et2O, the extract dried, and evaporated, and the solid residue crystallized gave 0.43 g. III. IV (1.09 g.) in 50 ml. H2O containing 0.6 g. NaOH treated with 2.54 g. iodine, the mixture heated 2 hrs., extracted with Et2O, and the product crystallized gave 0.51 g. V, m. 95-6° (isooctane). The isodiazotate salt of IV (0.73 g.) in 10 ml. H2O added to 15 ml. 57% HI at 0°, the mixture stirred 0.5 hr. at 0-5°, heated 0.5 hr., cooled, made alkaline, and extracted gave 0.12 g. V. NH4OH (25 ml. 28%) and 0.30 g. III heated 15 hrs. at 200° in an autoclave gave 0.13 g. 2,5-diamino-3,6-dimethylpyrazine (VII), prisms, m. 210-11° (C6H6). VII (0.36 g.) in 5 ml. concentrated H2SO4 added slowly at 0° to a nitrosylsulfuric acid solution (prepared from 15 ml. concentrated H2SO4 and 0.36 g. NaNO2 at 0°), the solution added to ice, adjusted to pH 6, filtered, the precipitate washed, the filtrate and washings evaporated, and the solid extracted with MeOH gave 0.32 g. 2,5-dihydroxy-3,6-dimethylpyrazine, yellow granules, m. above 320°. VI isodiazotate gave a low yield of iodopyrazine. The following procedure was used for preparing I. MeCOEt (140 ml.) and 2 ml. H2O saturated with NaI, the hot solution added to 0.036 mole of the appropriate chloropyrazine, a solution of 2 ml. 57% HI and 4 ml. H2O added, the mixture refluxed 48 hrs., the salt removed, the filtrate evaporated, the oily residue treated with 75 ml. H2O and 0.2 g. NaHSO3, then NaOH, the solution extracted with Et2O, the extract dried, evaporated, and the product isolated directly as a solid residue and recrystd. gave the following I (3, 5, 6 substituents, % yield, b.p./mm., m.p., nD, t, % yield of derived amine given): H, H, H, 40, 109-10°/34, -, 1.6403, 24°, 73; Me, H, H, 35, 137-8°/65, 40-1°, -, -, 72; Me, Me, H, 45, 154-5°/70, -, 1.6042, 27°, 23; Me, H, Me, 56, 140-1°/47, 61-2°, -, -, 72; H, Me, Me, 47, 120-1°/20, 55-7°, -, -, 51; Et, H, H, 46, 152-3°/72, -, 1.6003, 27°, 76; H, Ph, Ph, 33, -, 141-2°, -, -, 69. IT 101569-61-3P, Pyrazine, 2-amino-3-methyl-5,6-diphenyl- RL: PREP (Preparation) (preparation of) RN 101569-61-3 CAPLUS CN Pyrazine, 2-amino-3-methyl-5,6-diphenyl- (6CI) (CA INDEX NAME)



L14 ANSWER 350 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1961:38069 CAPLUS

DOCUMENT NUMBER: 55:38069

ORIGINAL REFERENCE NO.: 55:7423b-i,7424a-h

TITLE: Pteridines. XXIII. A facile pyrimidine ring cleavage

AUTHOR(S): Taylor, Edward C., Jr.; Knopf, Robert J.; Coglian, J.

A.; Barton, J. W.; Pfeleiderer, Wolfgang

CORPORATE SOURCE: Princeton Univ., Princeton, NJ

SOURCE: Journal of the American Chemical Society (1960), 82, 6058-64

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 55:38069

AB cf. CA 55, 551g. 4-Mercaptopteridines and -pyrimidines were readily cleaved by ClCH<sub>2</sub>CO<sub>2</sub>H (I) and alkali carbonate or MeI and alkali. The results of a study of this cleavage indicated that heterocyclic systems containing a fused 4-substituted pyrimidine ring underwent a base-catalyzed cleavage to an o-aminonitrile, provided that the anion formed by attack of base at C-2 of the fused pyrimidine ring was capable of stabilization by appropriate structural features in the remainder of the mol., and that the substituent group attached to C-4 was capable of departure with its bonding pair of electrons in an irreversible cleavage step. These results underscored a fundamental chemical difference between purines and pteridines. 4-Mercapto-6,7-diphenylpteridine (0.2 g.) and 0.1 g. I in 15 cc. N NaHCO<sub>3</sub> refluxed 0.5 hr. and filtered hot gave 0.12 g. 2-amino-3-cyano-5,6-diphenylpyrazine (II), m. 160-3°; the aqueous phase from a similar run with a slight deficiency of Na<sub>2</sub>CO<sub>3</sub> treated with AgNO<sub>3</sub> gave the insol. Ag salt of HSCH<sub>2</sub>CO<sub>2</sub>H. II (0.54 g.), 0.16 g. NaOH, and 2 cc. 30% H<sub>2</sub>O<sub>2</sub> in 25 cc. 40% aqueous EtOH refluxed 3 hrs. gave 0.40 g. 2-amino-5,6-diphenylpyrazine-3-carboxamide (III), yellow needles, m. 202-5°. II (1.4 g.) in 100 cc. 95% EtOH containing a few drops N(CH<sub>2</sub>CH<sub>2</sub>OH)<sub>3</sub> treated 3 hrs. at 50-5° with H<sub>2</sub>S, the whole cooled, and filtered yielded 1.3 g. 3-CSNH<sub>2</sub> analog of III, yellow needles, m. 158-60°. 4-Mercaptopteridine (IV) (0.5 g.), 0.45 g. I, 0.81 g. Na<sub>2</sub>CO<sub>3</sub>, and 30 cc. H<sub>2</sub>O refluxed 6 min., the mixture cooled to 0°, and filtered after 12 hrs. at 0° yielded 0.12 g. 2-amino-3-cyanopyrazine (V), needles, m. 192°; 0.04 g. 2nd crop. 4-MeS analog (VI) (0.54 g.) of V and 20 cc. N NaHCO<sub>3</sub> refluxed 6 min., the mixture filtered, and the filtrate evaporated, the residue sublimed at 150°/0.5 mm., and the sublimate (0.2 g.) extracted with Et<sub>2</sub>O left 0.07 g. 2-aminopyrazine-3-carboxamide (VII), needles, m. 235°; the residue from the Et<sub>2</sub>O extract recrystd. from H<sub>2</sub>O gave 0.09 g. V, needles, m. 188-90°; the sublimation residue recrystd. from H<sub>2</sub>O gave a small amount of 4-hydroxypteridine (VIII). VI (0.18 g.) and 10 cc. N NaHCO<sub>3</sub> refluxed 2 min., the mixture filtered hot, and the filtrate cooled gave 0.1 g. unchanged VI, m. 194°; the filtrate contained V, VII, and VIII. VI (0.16 g.) and 10 cc. N NaHCO<sub>3</sub> refluxed 45 min. gave a mixture of VI, VIII, and 2-amino-3-carboxylic acid; the mixture evaporated, and the residue sublimed at 150°/0.5 mm. yielded 0.07 g. VII, m. 230°. VI (0.16 g.) and 10 cc. N AcOH refluxed 1 hr. (MeSH evolved), the solution filtered hot with C, and cooled to 0° yielded 0.1 g. VIII. HC(OEt)<sub>3</sub> (60 cc.), 60 cc. Ac<sub>2</sub>O, and 8.0 g.

4-aminopyridine-5-carboxamide refluxed 3 hrs., the solution concentrated to about

1/3 of the original volume, diluted with 150 cc. dry Et<sub>2</sub>O, and cooled to 0° gave 6.30 g. 4-hydroxypyrimido[4,5-d]pyrimidine (IX), needles, m. 253-5° (decomposition) (H<sub>2</sub>O). Powdered IX (3.70 g.) and 5.55 g. P<sub>2</sub>S<sub>5</sub> in 20 cc. dry C<sub>5</sub>H<sub>5</sub>N refluxed 45 min., the mixture kept 15 min., poured with stirring into 50 cc. H<sub>2</sub>O and 50 g. crushed ice, stirred 0.5 hr., kept 12 hrs. at 0°, and filtered gave 3.80 g. 4-SH analog (X) of IX, bright yellow, did not melt but darkened rapidly above 300° (sublimed at 230°/0.1 mm.). X (0.66 g.) in 16 cc. 1% aqueous NaOH treated at 0-5° with 0.20 cc. MeI, the mixture stirred 1.5 hrs., filtered, and refrigerated overnight gave 0.40 g. 4-MeS analog (XI) of IX, m. 159-60° (sublimed at 130°/0.05 mm.). X (0.70 g.), 0.75 g. NaOH, and 12 cc. H<sub>2</sub>O stirred at room temperature to solution and then 2 hrs.

with

1.0 g. MeI, the whole cooled, and filtered gave 0.25 g. 4-amino-5-cyanopyrimidine, needles, m. 250-2° (H<sub>2</sub>O); also obtained in 82% yield by stirring XI in dilute aqueous NaOH at room temperature

4-Hydroxypyrid

o[3,4-d]pyrimidine (10 g.) and 59 g. P<sub>2</sub>S<sub>5</sub> in 250 cc. dry C<sub>5</sub>H<sub>5</sub>N refluxed 2 hrs. and the solution evaporated in vacuo, the residue treated with 500 cc.

H<sub>2</sub>O,

the mixture refluxed 20 min. after 12 hrs., and filtered, and the filter residue dissolved in 15 cc. H<sub>2</sub>O and 20 cc. concentrated NH<sub>4</sub>OH, the solution filtered, and added dropwise to 300 cc. refluxing H<sub>2</sub>O and 50 cc. AcOH gave 9.0 g. 4-mercaptopyrido[3,4-d]pyrimidine (XII) derivative of X, m. 325° (decomposition). XII (2.0 g.) in 20 cc. N NaOH and 10 cc. H<sub>2</sub>O shaken 5 min. with 1.5 cc. Me<sub>2</sub>SO<sub>4</sub> and filtered gave 1.5 g. 4-MeS analog of XII. 4-Aminonicotinic acid (XIII) (36 g.), 500 cc. absolute EtOH, and 36 cc.

concentrated

H<sub>2</sub>SO<sub>4</sub> refluxed 70 hrs. on the steam bath and the whole worked up gave 31 g. Et ester (XIV) of XIII, m. 100-5°. XIV (25 g.) and 50 cc. HCONH<sub>2</sub> heated 1 hr. at 160°, the mixture refluxed 3 hrs., cooled, and filtered yielded 10 g. 4-hydroxypyrido[4,3-d]pyrimidine (XV), m. 293° (H<sub>2</sub>O); 3.5 g. 2nd crop. XV was converted in the usual manner to the 4-SH analog (XVI) of XV, yellow, m. 323-5° (decomposition) (EtOH). XVI (1 g.), 0.9 g. I, 1.8 g. Na<sub>2</sub>CO<sub>3</sub>, and 30 cc. H<sub>2</sub>O refluxed 20 min., the mixture filtered, and cooled gave 0.15 g. 2-aminonicotinonitrile (XVII), m. 131°; the filtrate evaporated, and the residue sublimed at 120°/0.5 mm. gave 0.05 g. XVII; further sublimation at 200° yielded 0.1 g. 2-aminonicotinamide, m. 199°. XII (1 g.), 0.9 g. I, 1.8 g. Na<sub>2</sub>CO<sub>3</sub>, and 30 cc. H<sub>2</sub>O refluxed 20 min., the mixture filtered, and acidified to pH 2 with dilute HCl gave 0.7 g. 4-HO<sub>2</sub>CCH<sub>2</sub>S analog of XII, needles, m. 221° (decomposition); the filtrate chilled 4 days yielded 0.12 g. [3,4-d]-isomer (XVIII) of XV, m. 305°. XVI (1 g.), 0.9 g. I, 1.8 g. Na<sub>2</sub>CO<sub>3</sub>, and 30 cc. H<sub>2</sub>O refluxed 20 min. and worked up gave 0.45 g. 4-isomer of XVII, m. 173°. 9-Methyl-6-mercaptopurine (1.0 g.) in 10 cc. H<sub>2</sub>O containing 0.9 g. I and 1.8 g. Na<sub>2</sub>CO<sub>3</sub> refluxed 35 min., the mixture cooled to room temperature, and acidified with dilute HCl gave 1.25 g. 9-methyl-6-carboxymethylthiopurine, m. 225-6° (hot 30% aqueous EtOH). 6-Nitro-4-quinazalone (1.0 g.), 1.5 g. P<sub>2</sub>S<sub>5</sub>, and 15 cc. dry C<sub>5</sub>H<sub>5</sub>N refluxed 0.5 hr., the whole cooled, poured onto crushed ice, filtered after 2 hrs., and the residue reprecipitated with AcOH from dilute aqueous NaOH gave 0.93 g. 4-mercapto-6-nitroquinazoline (XIX), bright yellow needles, m. 261-3° (decomposition) (aqueous C<sub>5</sub>H<sub>5</sub>N). The 7-NO<sub>2</sub> and the 8-NO<sub>2</sub> isomers (XX) of XIX, bright yellow needles, m. 270-1° (decomposition) (aqueous C<sub>5</sub>H<sub>5</sub>N), and yellow needles, m. 266-7° (decomposition) (aqueous C<sub>5</sub>H<sub>5</sub>N), resp., were prepared in 67 and 46%, resp., yields from 7- and 8-nitro-4-quinazalone, resp. 5-Nitro-4-quinazalone (6 g.) and 10.5 g. PC15 heated 3 hrs. at 150°, the mixture cooled, diluted with 150 cc. petr. ether (b. 60-70°), cooled 1 hr. at 0°, and filtered, the residue stirred 10 min. with dilute aqueous NaOH, ice, and CH<sub>2</sub>Cl<sub>2</sub>, and the

organic layer worked up yielded 4.7 g. 4-chloro-5-nitroquinazoline (XXI), needles, m. 146-7° (sublimed at 130°/0.1 mm.). XXI (1 g.) in 20 cc. dioxane treated with stirring at room temperature with KSH (from 0.3 g. KOH) in 20 cc. absolute EtOH, the whole diluted after 1 hr. with 20 cc.

Et2O,

and filtered, and the residue added rapidly with stirring to 10 cc. H2O, 0.25 g. NaOH, and 0.4 cc. MeI, and the mixture filtered after 20 min. yielded 0.55 g. 4-methylthio-5-nitroquinazoline, pale yellow flakes, m. 146-7° (petr. ether). XIX (7.35 g.), 400 cc. H2O, 6.8 g. KOH, and 8.4 g. MeI stirred 4 hrs. at room temperature gave 7.2 g. 4-MeS analog (XXII)

of

XIX, m. 162-3° (absolute EtOH). XIX (1 g.), 0.5 g. I, and 20 cc. H2O refluxed 0.5 hr., the mixture cooled to 0°, and filtered gave 0.43 g. 5-nitroanthranilonitrile (XXIII), m. 210-11° (sublimed at 140°/0.05 mm.). XXII (0.5 g.), 1.24 g. KOH, 40 cc. H2O, and 60 cc. dioxane stirred 2 hrs. at room temperature, the solution concentrated, and cooled yielded

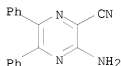
0.032 g. XXIII, m. 210°. XX (1 g.) treated with I and K2CO3 in the usual manner gave 0.085 g. 3-isomer of XXIII, yellow needles, m. 137-8° (sublimed at 100°/0.01 mm.).

IT 70186-75-3P, Pyrazinonitrile, 3-amino-5,6-diphenyl-  
101445-25-4P, Pyrazinamide, 3-amino-5,6-diphenyl-  
110490-39-6P, Pyrazinamide, 3-amino-5,6-diphenylthio-  
RL: PREP (Preparation)

(preparation of)

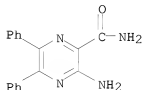
RN 70186-75-3 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



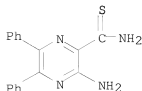
RN 101445-25-4 CAPLUS

CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 110490-39-6 CAPLUS

CN Pyrazinamide, 3-amino-5,6-diphenylthio- (6CI) (CA INDEX NAME)



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ACCESSION NUMBER: 1958:55949 CAPLUS

DOCUMENT NUMBER: 52:55949

ORIGINAL REFERENCE NO.: 52:10106g-i,10107a-i,10108a-i

TITLE: Pteridines. XVI. A synthesis of 2-aminopyrazine-3-

carboxamides by reductive ring cleavage of

3-hydroxy-1-pyrazolo[b]pyrazines

AUTHOR(S): Taylor, E. C., Jr.; Barton, J. W.; Osdene, T. S.

CORPORATE SOURCE: Princeton Univ., Princeton, NJ

SOURCE: Journal of the American Chemical Society (1958), 80,

421-7

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 52:55949

AB cf. C.A. 50, 13047b. PhN:NCH(CN)CO<sub>2</sub>Et (I) (4.1 g.) and 25 cc. EtOH refluxed 15 min. with 1.4 g. N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O, cooled to 0°, and filtered yielded 3.6 g. 3-hydroxy-4-phenylazo-5-aminopyrazole (II), deep red needles, m. 256° (decomposition). HON:C(CN)CONHNH<sub>2</sub> N<sub>2</sub>H<sub>4</sub> salt (III) (5.0 g.) in 25 cc. 40% aqueous NaOH kept 1 hr. at 60°, acidified with glacial AcOH, and filtered gave 3.87 g. 3-hydroxy-4-nitroso-5-aminopyrazole (IV); a similar run heated 0.5 hr. on the steam bath gave 2.56 g. IV. III (5.0 g.) in 100 cc. EtOH containing 6 g. Na refluxed 4 hrs. with stirring and filtered, and the residue dissolved in 25 cc. H<sub>2</sub>O, acidified with glacial AcOH, and cooled gave 4.0 g. IV. II (4.0 g.) in 50 cc. 98% HCO<sub>2</sub>H hydrogenated at 3 atmospheric over 0.4 g. 10% Pd-C, filtered, and evaporated, the residue triturated with 1:1 EtOH-Et<sub>2</sub>O, and the undissolved material recrystd. with C from H<sub>2</sub>O gave 2.95 g. diformyl derivative (V) of 3-hydroxy-4,5-diaminopyrazole (VI), m. 212-13° (decomposition). IV (2.0 g.) in 40 cc. 98% HCO<sub>2</sub>H hydrogenated over 10% Pd-C yielded 2.05 g. V. V (8 g.) in 30 cc. 50% H<sub>2</sub>SO<sub>4</sub> warmed to beginning crystallization, diluted with boiling H<sub>2</sub>O to solution, and cooled slowly yielded 9.4 g. VI.H<sub>2</sub>SO<sub>4</sub>, light yellow crystals. I (32.5 g.), 7.5 cc. 99% MeNHNH<sub>2</sub>, and 250 cc. EtOH refluxed 4 hrs. and cooled to 0° gave 27 g. 1-Me derivative (VII) of II, m. 265° (EtOH). HON:C(CN)CO<sub>2</sub>Et (7.1 g.), 5 cc. 99% MeNHNH<sub>2</sub>, and 30 cc. EtOH refluxed 3 hrs., refluxed 1 hr. with stirring with 30 cc. 30% alc. KOH, cooled to 0°, and filtered, and the residue dissolved in 20 cc. H<sub>2</sub>O and adjusted with AcOH to pH 5 yielded 2.9 g. 1-Me derivative (VIII) of IV, m. 184-6°; 2nd crop, 0.3 g. VII (20 g.) in 100 cc. 90% HCO<sub>2</sub>H hydrogenated 45 min. at 3 atmospheric over 1 g. 10% Pd-C, filtered, and evaporated in vacuo, the residual oil washed with Et<sub>2</sub>O and dissolved in 70 cc. EtOH, and the solution cooled gave 12.8 g. monoformyl derivative (IX) of the 1-Me derivative (X) of VI, m. 210°; it gave recrystd. from aqueous EtOH a lower-melting hydrate, m. 188-9° with loss of moisture at 133-5°. VIII (2.0 g.) in 40 cc. 90% HCO<sub>2</sub>H hydrogenated in the usual manner and evaporated in vacuo, and the residual brown oil dissolved in a small amount of EtOH and cooled at 0° yielded 1.5 g. IX, m. 188-90°. IX (10 g.) recrystd. from 30 cc. 20% H<sub>2</sub>SO<sub>4</sub> containing 25 cc. EtOH yielded 13.9 g. X.H<sub>2</sub>SO<sub>4</sub>, m. above 300°. 1-Phenyl-3-hydroxy-5-aminopyrazole (5.25 g.) in 50 cc. 10% aqueous NaOH added dropwise to PhN<sub>2</sub>Cl in NaOAc buffer (from 3 g. PhNH<sub>2</sub>, 6 cc. concentrated HCl, 2.1 g. NaNO<sub>2</sub>, and 12 cc. H<sub>2</sub>O) stirred 0.5 hr., and filtered gave 7.95 g. 1-Ph derivative (XI) of II, deep yellow plates, m. 266-8° (decomposition) (Cellosolve). 2-Phenyl-3-hydroxy-5-aminopyrazole yielded similarly 91% 2-Ph derivative (XII) of II, purple-red needles, m. 194-5° (EtOH). I (40 g.), 20 cc. PhNHNH<sub>2</sub>, and 200 cc. iso-AmOH refluxed 24 hrs., cooled to room temperature, and filtered, and the residue washed with 100 cc. cold EtOH gave 24.2 g. XII; the mother liquor kept at 0° overnight deposited 1.8 g.

phenylazomalonamide phenylhydrazone N-phenylhydrazide, yellow needles, m. 187-8° (EtOH). I (4 g.) and 2 cc. PhNHNH2 refluxed 20 hrs. with 0.87 g. Na in 75 cc. iso-AmOH and evaporated in vacuo, the residue triturated with 50% aqueous AcOH, the resulting solid extracted with 200 cc. boiling EtOH, and the extract concentrated to 50 cc. and cooled yielded 1.39 g. XII; the EtOH-insol. residue recrystd. from Cellosolve yielded 0.82 g. XI, m. 266-8° (decomposition). XI (5.0 g.) in 50 cc. 90% HCO2H hydrogenated 1 hr. at room temperature and 3 atmospheric over 0.5 g. 10% Pd-C, filtered, and evaporated in vacuo, and the oily residue triturated with 50 cc. 1:3 EtOH-Et2O gave 3.1 g. monoformyl derivative (XIII) of 1-phenyl-3-hydroxy-4,5-diaminopyrazole (XIV), plates, m. 223-5° (decomposition) (aqueous EtOH). Crude XIII (3.1 g.) warmed on a water bath with 3 cc. concentrated H2SO4, 7 cc. H2O, and 3 cc. EtOH, diluted with 4 cc. EtOH, and cooled gave 4.8 g. XIV.H2SO4, yellow needles. XII (8.0 g.), 100 cc. 90% HCO2H, and 0.8 g. 10% Pd-C hydrogenated at 3 atmospheric yielded 4.8 g. monoformyl derivative (XV) of 2-phenyl-3-hydroxy-4,5-diaminopyrazole (XVI), m. 235° (decomposition) (aqueous EtOH). XII (12 g.) converted to the XV and the crude product crystallized from 1:1 30% H2SO4-EtOH yielded 11.6 g. XVI.H2SO4, orange plates. VI.H2SO4 (20 g.) and 28 g. glyoxal-NaHSO3 adduct (XVII) in 250 cc. H2O treated dropwise with stirring at 60°, stirred 0.5 hr., adjusted to pH 5, cooled to 0°, and filtered gave 9.9 g. 3-hydroxy-1-pyrazolo[b]pyrazine (XVIII), yellow, m. 314-15° (decomposition). VI.H2SO4 (1.5 g.) in 10 cc. H2O treated with shaking with 1 cc. Ac2 and filtered yielded 0.93 g. 5,6-di-Me derivative (XIX) of XVIII, yellow, m. 325° (decomposition) (sublimed at 230°/0.1 mm.). VI.H2SO4 (4.2 g.), 6.3 g. Bz2, 1.2 g. NaOH, 30 cc. EtOMe, 30 cc. EtOH, and 20 cc. H2O refluxed 1.5 hrs., concentrated in vacuo to about 1/6 its original volume, basified with aqueous NaOH, treated with C, and filtered, the filtrate acidified with HCl, and the precipitate reprecipitated from aqueous NaOH with HCl and dried azeotropically with C6H6 yielded 3.5 g. 5,6-di-Ph derivative (XX) of XVIII, yellow, m. 269° (decomposition) (EtOAc). X.H2SO4 (4.52 g.), 5.6 g. XVII, and 40 cc. H2O adjusted slowly with stirring to pH 5, kept at room temperature overnight, and filtered gave 2.84 g. 1-Me derivative (XXI) of XVIII, bright yellow needles, m. 242-3° (sublimed at 200°/0.1 mm.). XVIII (1.0 g.) in 10 cc. 10% aqueous NaOH treated at 60° with stirring with 1.4 g. MeI and evaporated in vacuo after 45 min., and the residue dissolved in a little H2O and reprecipitated with AcOH (pH 5) yielded 0.62 g. XXI. X.H2SO4 (1.13 g.), 0.5 cc. Ac2, and 10 cc. H2O treated dropwise with NH4OH to pH 7-8 and readjusted to pH 5 after 10 min. with AcOH gave 0.78 g. 1,5,6-tri-Me derivative of XVIII, m. 268-9° (EtOH and sublimed at 200°/0.1 mm.). X.H2SO4 (1.0 g.), 1 g. Bz2, 10 cc. H2O, 10 cc. EtAc, and 10 cc. EtOH adjusted to pH 8 with 40% aqueous NaOH, refluxed 1.5 hrs., kept at room temperature overnight, and concentrated in vacuo, the residue diluted with H2O, the suspension adjusted with NaOH to pH 9, and the solution heated to boiling, treated with C, filtered, and acidified with AcOH yielded 0.35 g. 1-Me derivative of XX, m. 258-60° (EtOH and sublimed at 200°/0.1 mm.). XVIII (15 g.) in 150 cc. 10% aqueous NaOH and 15 cc. EtOH treated with 15 cc. PhCH2Cl, evaporated after 1 hr. in vacuo, acidified with 50% aqueous AcOH, and filtered gave 18.4 g. 1-PhCH2 derivative (XXII) of XVIII, pale yellow needles, m. 175-6° (MeOH). XIV.H2SO4 (12 g.) and 13 g. XVII in 150 cc. H2O adjusted slowly with concentrated NH4OH to pH 7-8, stirred 45 min., readjusted to pH 5 with glacial AcOH, and cooled to 0° yielded 7.7 g. 1-Ph derivative (XXIII) of XVIII, lime-green needles, m. 227-9° (aqueous EtOH). XVI.H2SO4 (37 g.), 40 g. XVII, and 400 cc. H2O gave in the same manner 23.2 g. 2-phenyl-1-pyrazolo[b]pyrazin-3(2H)-one (XXIV), pale green plates, m. 232-3.5° (EtOH). XVI.H2SO4 (0.96

g.), 0.4 cc. Ac<sub>2</sub>, and 100 cc. H<sub>2</sub>O yielded in the same manner 0.8 g. 5,6-di-Me derivative of XXIV, m. 239-40°, which recrystd. from EtOH and sublimed at 200°/0.1 mm. gave another polymorphic form, m. 193-5°. VI.H<sub>2</sub>SO<sub>4</sub> (8.5 g.) and 8.8 g. NaHSO<sub>3</sub> in 100 cc. H<sub>2</sub>O treated with 6 cc. 47.5% AcCHO, treated dropwise with stirring at 60° until the pH reached 7-8, stirred 45 min., adjusted with dilute AcOH to pH 4-5, and cooled to 0° gave 3.83 g. 6-Me derivative (XXV) of XVIII, light yellow needles, m. 319-21° (H<sub>2</sub>O); the mother concentrated in vacuo to 1/3 the original volume and kept 24 hrs. at 0° gave 1.15 g. 5-Me derivative (XXVI) of XVIII, buff-colored prisms, m. 234-5° (EtOH). XVIII (1.0 g.), 20 cc. HCONH<sub>2</sub>, and 3 g. Raney Ni heated 1.5 hrs. with stirring at 115-20°, treated with an addnl. 2 g. catalyst, heated again 1.5 hrs. with stirring, filtered, and cooled yielded 0.58 g. 2-aminopyrazine-3-carboxamide (XXVII), m. 244-5°. XIX (0.5 g.), 50 cc. 95% EtOH, and 6 g. Raney Ni refluxed 2 hrs., filtered, and evaporated, and the solid residue sublimed at 200°/0.1 mm. gave 0.28 g. 5,6-di-Me derivative (XXVIII) of XXVII, light yellow, m. 255°. IV (1.28 g.) in 40 cc. H<sub>2</sub>O containing 2 cc. concentrated NH<sub>4</sub>OH refluxed 7 hrs. with 1.2 g. Ac<sub>2</sub>

and 4

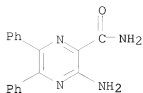
g. Raney Ni, filtered, and cooled to 0° gave 0.32 g. XXVIII; the Raney Ni residue extracted with boiling EtOH gave an addnl. 0.06 g. XXVIII. XX (1.0 g.), 50 cc. 95% EtOH, and 8 g. Raney Ni refluxed 3 hrs., filtered, and evaporated in vacuo, the residue triturated with H<sub>2</sub>O and filtered, and the insol. portion washed, dried (0.8 g.), and sublimed at 190°/0.01 mm. yielded the 5,6-di-Ph derivative of XXVII, bright yellow, m. 203-5°. XXI (1.0 g.), 100 cc. 95% EtOH, and 5 g. Raney Ni refluxed 2.5 hrs., filtered, and evaporated in vacuo gave 0.38 g. 2-MeNH analog of XXVII, light yellow rods, m. 200-1° (sublimed at 180°/0.1 mm.). XXIII (6 g.), 60 g. Raney Ni, and 600 cc. EtOH refluxed 4 hrs. with stirring and filtered through Celite, the filter cake extracted with hot EtOH, the combined filtrate and washing evaporated in vacuo, and the residue (3.2 g.) recrystd. gave the 2-PhNH analog of XXVII, greenish yellow plates from EtOH by slow crystallization or needles by rapid cooling, m. 175-6°. XXIV (5.0 g.), 500 cc. 95% EtOH, and 50 g. Raney Ni refluxed 3 hrs. and filtered, the residue washed with hot EtOH, the combined alc. solns. evaporated, and the residue sublimed at 160-70°/15 mm. yield 52% 2-aminopyrazine-3-carboxylic acid anilide (XXIX), needles, m. 106-7° (EtOH). XXIX (2.0 g.) and 50 cc. 10% aqueous NaOH refluxed 2.5 hrs., diluted with 50 cc. H<sub>2</sub>O, cooled, and extracted with Et<sub>2</sub>O, and the aqueous layer adjusted to pH 5 gave 2-aminopyrazine-3-carboxylic acid (XXX), m. 200-1°; the Et<sub>2</sub>O extract evaporated and the residual oil treated with Ac<sub>2</sub>O gave 0.41 g. AcNHPh, m. 112-13°. XXII (3.75 g.), 40 g. Raney Ni, and 400 cc. EtOH refluxed 3 hrs. with stirring gave in the usual manner 0.24 g. unchanged XXII and 1.35 g. 2-PhCH<sub>2</sub>NH analog (XXXI) of XXVII, needles, m. 125-6° (EtOH). XXXI (1.0 g.) and 10 cc. 10% aqueous NaOH refluxed 2 hrs., adjusted to pH 4 with dilute HCl, cooled, and filtered gave 0.78 g. 2-PhCH<sub>2</sub>NH derivative of XXX, plates, m. 166.5-68° (aqueous EtOH). XXVI (2 g.), 20 g. Raney Ni, and 200 cc. EtOH refluxed 4 hrs. with stirring gave 0.93 g. 5-Me derivative of XXVII, m. 203-4° (MeOH). XXV gave similarly 51.5% 6-Me derivative (XXXII) of XXVII, pale yellow, m. 235-6° (sublimed at 160-70°/18 mm.). XXXII (1.0 g.) and 10 cc. 10% aqueous NaOH refluxed 2 hrs., adjusted to pH 4 with dilute HCl, cooled to 0°, and filtered gave 0.72 g. 6-Me derivative of XXX, m. 211-12° (decomposition) (aqueous EtOH).

IT 101445-25-4P, Pyrazinamide, 3-amino-5,6-diphenyl-  
RL: PREP (Preparation)

(preparation of)

RN 101445-25-4 CAPLUS

CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



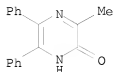
L14 ANSWER 352 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1958:16076 CAPLUS  
 DOCUMENT NUMBER: 52:16076  
 ORIGINAL REFERENCE NO.: 52:2935i,2936a-d  
 TITLE: 2-Hydroxypyrazines  
 INVENTOR(S): Hultquist, Martin E.  
 PATENT ASSIGNEE(S): American Cyanamid Co.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Unavailable  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2805223		19570903	US 1955-488161	19550214

AB Hydroxypyrazines can be prepared by condensing  $\alpha$ -amino acid nitriles with dicarbonyl compds. Thus, to 50% NaOH 38 and saturated NaCl solution 30 at 0° is added a mixture of 30% glyoxal (I) 24 and glycine nitrile sulfate 15.4 in ten min., NaCl 25 parts added, the mixture cooled to -10°, and the Na salt (II) of 2-hydroxypyrazine (III) filtered off and washed with cold saturated NaCl. The filter cake, dried at 60°, treated with boiling EtOH, filtered, and the filtrate evaporated to dryness, gives II. To 5N NaOH 20 and ice 10 is added glycine nitrile-HCl (IV) 9.2 parts (volume) and then I 24 parts (weight) at 0-10°, then 5N NaOH 20 parts (volume) in 20 min. to give a pH of 12-13. After 30 min. at 20-30°, and 10 min. at 50°, at a pH of 12-13, 5N NaOH 20 and NaCl 30 parts added, the mixture cooled to 0°, filtered, and the filter cake treated as before, gives parts II 7. To 50% NaOH 9 and H2O 6 are added IV 3 and I 8.5 parts during 10 min. and the precipitate filtered off at -5° and washed with cold saturated NaCl. The cake is slurried with anhydrous EtOH 15 parts (volume) and concentrated HCl added to a pH of 7-7.5. The mixture, filtered, the filtrate evaporated to 1/8 volume, cooled, filtered, washed with EtOH, and dried, gives III, m. 185-8°. Similarly, 5N NaOH 40, IV 18.5, 50% NaOH 16, and diacetyl (V) 20 parts, treated as above and extracted with CHCl3, give 2-hydroxy-5,6-dimethylpyrazine, m. 195-200°. To 50% NaOH 6 in MeOH 20 (volume) are added benzyl (VI) 4 and IV 1.8 parts, giving, from H2O, 2-hydroxy-5,6-diphenylpyrazine 4 parts, m. 238-40°. To saturated NaCl 20 (volume) is added  $\alpha$ -alanine nitrile (VII) 14 and I 48 and 50% NaOH 21 parts (weight), and the mixture further treated with 50% NaOH 450 parts, giving, from iso-PrOAc, crystalline 2-hydroxy-3-methylpyrazine, m. 150-2°. To VII 14 and V 16 in MeOH 50 (volume) is added 50% NaOH 33 below -10°, the pH adjusted to 7.0-7.5 after 2 hrs. at 20-5°, the solution evaporated to 60 parts (volume) and extracted with CHCl3, giving, from iso-PrOAc, cream colored 2-hydroxy-3,5,6-trimethylpyrazine, m. 200-1°. VI 21 and VII 7 parts give 2-hydroxy-3-methyl-5,6-diphenylpyrazine, needles, m. 212.5-3.5°. The products are useful in the preparation of dyes and pharmaceuticals.



IT 108981-53-9P, Pyrazinol, 3-methyl-5,6-diphenyl-  
RL: PREP (Preparation)  
(preparation of)  
RN 108981-53-9 CAPLUS  
CN 2(1H)-Pyrazinone, 3-methyl-5,6-diphenyl- (CA INDEX NAME)



L14 ANSWER 353 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1957:90672 CAPLUS

DOCUMENT NUMBER: 51:90672

ORIGINAL REFERENCE NO.: 51:16437g-i,16438a-c

TITLE: The Debus glycosine synthesis

AUTHOR(S): Kuhn, Richard; Blau, Werner

CORPORATE SOURCE: Max Planck Inst. Med. Forsch., Heidelberg, Germany

SOURCE: Ann. (1957), 605, 32-5

DOCUMENT TYPE: Journal

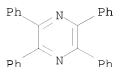
LANGUAGE: Unavailable

AB cf. Debus, Ann. 107, 199 (1858). The original synthesis of "glycosine" (2,2'-biimidazole) (I) was improved. To 500 cc. 10% tech. (CHO)<sub>2</sub> solution in 2.3N HNO<sub>3</sub> was added 250 g. (NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub>, the mixture evaporated to dryness at 140°, and the black residue extracted with H<sub>2</sub>O, dried, and sublimed at 14 mm. giving 11 g. I, needles (from (CH<sub>2</sub>OH)<sub>2</sub>). Similarly, 7.9 g. AcCHO and 30 cc. 10% tech. (CHO)<sub>2</sub> heated with 100 cc. H<sub>2</sub>O and 25 g. (NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub> followed by evaporation and sublimation gave 2 g. mixture of I and 4,4' (or 5,5')di-Me derivative of I isolated as the dipicrate, C<sub>20</sub>H<sub>16</sub>O<sub>14</sub>N<sub>10</sub>, needles, decompose about 230°. Ac<sub>2</sub> and tech. (CHO)<sub>2</sub> heated with (NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub> in H<sub>2</sub>O gave the insol. crude 4,4',5,5'-tetra-Me derivative of I (purified by sublimation and crystallization from (CH<sub>2</sub>OH)<sub>2</sub>); dipicrate, decompose about 240°. I (6 g.) heated 6 hrs. with 60 cc. 6% H<sub>2</sub>SO<sub>4</sub>, poured into 300 cc. H<sub>2</sub>O, neutralized with NH<sub>4</sub>OH, filtered, treated with excess Ba(OH)<sub>2</sub>, filtered, evaporated, treated with CO<sub>2</sub>, filtered from the BaCO<sub>3</sub>, made slightly acid with 2N H<sub>2</sub>SO<sub>4</sub>, concentrated to 10 cc., and treated with 40 cc. EtOH gave 2 g. 4(or 5)-glycosinesulfonic acid (II), C<sub>6</sub>H<sub>6</sub>O<sub>3</sub>N<sub>4</sub>S, decompose above 300°, 0.5 g. of which refluxed 2 hrs. with 20 cc. concentrated HCl and neutralized with NH<sub>4</sub>OH yielded 300 mg. I. II (250 mg.) and 0.5 AcONa in 5 cc. glacial AcOH and enough H<sub>2</sub>O to insure solution treated with 1 g. Br and heated 0.5 hr. on a steam bath gave 400 mg. 4,4',5,5'-tetra-Br derivative of I, turning black with NH<sub>4</sub>OH (cf. Lehmsstedt and Rolker, C.A. 38, 29553). Didesyl oxalate (4.5 g.) (cf. McCombie and Parkes, C.A. 8, 3031) in 50 cc. glacial AcOH refluxed 1 hr. with 20 g. AcONH<sub>4</sub> and 150 cc. H<sub>2</sub>O added yielded 3.7 g. amarone (tetraphenylpyrazine), needles, m. 251°, giving a deep red color with H<sub>2</sub>SO<sub>4</sub>. Attempts to condense (CHO)<sub>2</sub> and NH<sub>4</sub>OH with 1,2-dicarbonyl derivs. other than Ac<sub>2</sub> were unsuccessful. With Bz<sub>2</sub>, β-naphthoquinone, and camphorquinone, the starting products were recovered. With BzCHO, (Me<sub>2</sub>CHCO)<sub>2</sub>, 1,2-cyclohexanedione, and 1,2-cycloheptanedione, dark resins were formed from which no derivs. of I could be isolated. However Japp and Clemenishaw [J. Chemical Society 51, 553(1887)] report that Bz<sub>2</sub> gave a very low yield of the tetra-Ph derivative of I, so the possibility remains that by changing the present conditions, derivs. of I might be obtained.

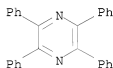
IT 642-04-6P, Pyrazine, tetraphenyl-  
RL: PREP (Preparation)  
(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 354 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1957:89352 CAPLUS  
DOCUMENT NUMBER: 51:89352  
ORIGINAL REFERENCE NO.: 51:16126d-e  
TITLE: Liquid scintillators. I. Pulse height comparison of primary solutes  
AUTHOR(S): Hayes, F. Newton; Ott, Donald G.; Kerr, Vernon N.; Rogers, Betty S.  
CORPORATE SOURCE: Univ. of California, Los Alamos, NM  
SOURCE: Nucleonics (1955), 13(No. 12), 38-41  
CODEN: NUCLAM; ISSN: 0096-6207  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
AB The efficiency of 102 organic scintillators, dissolved in toluene, was investigated by comparing the pulse heights obtained under excitation by 624-e.kv. electrons from Cs137. A DuMont 6292 photomultiplier served as detector. Best results were obtained with 2-phenyl-5-(4-biphenyl)-1,3,4-oxadiazole.  
IT 642-04-6, Pyrazine, tetraphenyl-  
(scintillator, liquid)  
RN 642-04-6 CAPLUS  
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



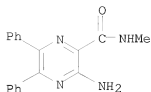
L14 ANSWER 355 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1957:76968 CAPLUS  
DOCUMENT NUMBER: 51:76968  
ORIGINAL REFERENCE NO.: 51:13875a-h  
TITLE: Pteridines. V. Derivatives of 1,4-dihydro-1- and 3,4-dihydro-3-methyl-6,7-diphenylpteridine  
AUTHOR(S): Boon, W. R.; Bratt, G.  
CORPORATE SOURCE: Imp. Chem. Ltd., Manchester, UK  
SOURCE: Journal of the Chemical Society (1957) 2159-61  
CODEN: JCSOA9; ISSN: 0368-1769  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
AB Condensation of MeHNC:(NH)NH2 with CH2CNC02Et gave 4-amino-6-hydroxy-2-methylaminopyrimidine and 2,6-diamino-3,4-dihydro-3-methyl-4-oxopyrimidine and not 2,6-diamino-3,4-dihydro-3-methyl-4-oxopyrimidine (Roth, et al., C.A. 46, 3059g). 5,6-Diamino-1,4-dihydro-2-mercapto-1-methyl-4-oxopyrimidine sulfate (I) [Traube and Winter, Arch. Pharm. 244, 16(1906)] (7 g.), 6 g. benzil (II), and 18 g. NaOAc.3H2O (III) refluxed 6 hrs. in 75% aqueous EtOH, the mixture cooled, the product collected, extracted with hot

petr. ether (b. 100-20°), and crystallized from BuOH gave 7.4 g. 1,4-dihydro-2-mercapto-1-methyl-4-oxo-6,7-diphenylpteridine (IV), m. 289°. 2,5,6-Triamino-1,4-dihydro-1-methyl-4-oxopyrimidine (6.3 g.), 5.8 g. II, and 17 g. III refluxed 6 hrs. in 25% aqueous EtOH, the solution cooled, the precipitate collected, and crystallized from HCONMe2 (V) gave 10 g. 2-amino-1,4-dihydro-1-methyl-4-oxo-6,7-diphenylpteridine (VI), m. 333° (decomposition). IV (0.4 g.), 0.5 g. HgO, 70 cc. BuOH, and 10 cc. CHCl3 refluxed 6 hrs. in a slow stream of NH3, the mixture filtered hot, the filtrate evaporated in vacuo, and the residue crystallized from V and then from EtOH gave VI, m. 333° (decomposition). 1,4-Dihydro-1-methyl-2-methylamino-4-oxo-6,7-diphenylpteridine (VII), m. 307° (from EtOH), was obtained similarly using MeNH2 in lieu of NH3. VI (0.5 g.) and 50 cc. 2N NaOH refluxed 4 hrs., the solution cooled, acidified with AcOH, the precipitate collected, and crystallized from aqueous EtOH gave 0.16 g. 1,4-dihydro-2-hydroxy-1-methyl-4-oxo-6,7-diphenylpteridine (VIII), m. 280°. To 0.9 g. I in N KOH was added dropwise with stirring at 100° 10 cc. H2O2 (100 volume), the solution cooled, acidified with AcOH, the precipitate (0.3 g.) collected, and crystallized from EtOH giving VIII, m. 280°. 2-Amino-1,4-dihydro-1-methyl-6,7-diphenyl-4-thionopteridine (IX) (see below) (3 g.) in 300 cc. 2N NaOH refluxed 4 hrs., the solution cooled, acidified, and the product fractionally crystallized from MeOH gave VIII. VI (15 g.), 19.5 g. P2S5, and 300 cc. pyridine (X) refluxed 2 hrs., X removed in vacuo, the residue extracted with 2% aqueous NaOH, and crystallized twice from V gave 7.4 g. IX, m. 295° (decomposition). On similar treatment, VII gave 16% 1,4-dihydro-1-methyl-2-methylamino-6,7-diphenyl-4-thionopteridine, m. 300° (decomposition) (from V), and IV gave 53% 1,4-dihydro-2-mercapto-1-methyl-6,7-diphenyl-4-thionopteridine, m. 375° (decomposition) (from V without prior extraction with NaOH). 2,4-Diamino-6,7-diphenylpteridine (3 g.), 6 g. MeI, and 60 cc. EtOCH2CH2OH refluxed 3 hrs., the solution cooled, the hydriodide [m. 315° (decomposition)] collected, and boiled 5 min, with 10% aqueous Na2CO3 gave 1.7 g. 2-amino-1,4-dihydro-4-imino-1-methyl-6,7-diphenylpteridine (XI), m. 256°. IX (2 g.), 2.5 g. HgO, 120 cc. EtOH, and 20 cc. CHCl3 refluxed 6 hrs. in a stream of NH3, the mixture filtered hot, the filtrate cooled, and the product (0.9 g.) crystallized from EtOH gave XI, m. 256°. Similarly was obtained 21% 2-amino-1,4-dihydro-1-methyl-4-methylimino-6,7-diphenylpteridine, m. 256° (from EtOH). 2-Amino-5,6-diphenylpyrazine-3-carboxylic acid (Weiljard, et al., C.A. 39, 30012) Me ester (3.6 g.) and 50 g. MeNH2 in 500 cc. EtOH heated 16 hrs. at 160-70°, the solution cooled, the precipitate collected, and crystallized from MeOH gave 2 g. N:C(NH2).C(CONHMe):N:CPh:CPh.N (XII), m. 198°. XII (1.5 g.) and 40 cc. ClCO2Et refluxed 20 hrs., excess ClCO2Et removed in vacuo, and the residue crystallized from CHCl3-petr. ether gave 1.7 g. N:C(NHCO2Et).C(CONHMe):N:CPh:CPh.N (XIII), m. 153°. XIII (1.25 g.) refluxed 10 hrs. with NaOMe solution (from 1.5 g. Na in 200 cc. EtOH), EtOH removed in vacuo, the residue suspended in H2O, acidified with AcOH, and the precipitate crystallized from EtOH gave 0.7 g. 3,4-dihydro-2-hydroxy-3-methyl-4-oxo-6,7-diphenylpteridine, m. 307°.

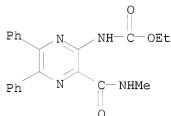
IT 60980-98-5  
(Derived from data in the 6th Collective Formula Index (1957-1961))

RN 60980-98-5 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



IT 102318-77-4P, Pyrazinecarbamic acid, 3-methylcarbamoyl-5,6-diphenyl-, ethyl ester  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 102318-77-4 CAPLUS  
 CN Pyrazinecarbamic acid, 3-methylcarbamoyl-5,6-diphenyl-, ethyl ester (6CI)  
 (CA INDEX NAME)



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 ACCESSION NUMBER: 1957:76967 CAPLUS  
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 ORIGINAL REFERENCE NO.: 51:13870c-i,13871a-i,13872a-i,13873a-i,13874a-i,13875a  
 TITLE: Pteridines. IV. Derivatives of 2,4-diaminopteridine and related compounds  
 Boon, W. R.  
 AUTHOR(S):  
 CORPORATE SOURCE: Imp. Chem. Ltd., Manchester, UK  
 SOURCE: Journal of the Chemical Society (1957) 2146-58  
 CODEN: JCSOA9; ISSN: 0368-1769  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 OTHER SOURCE(S): CASREACT 51:76967  
 GI For diagram(s), see printed CA Issue.  
 AB cf. C.A. 46, 2082g. Several derivs. of 2,4-(H2N)2-Y (in this abstract Y = pteridine) possess antimalarial activity (Potter and Henshall, C.A. 51, 1974h). A series of 2,4,6,7-(H2N)2Ph2-Y were prepared in which the H2N groups were progressively substituted by Me. Antimalarial activity was immediately lost, but the compds. were active against exptl. schistosomiasis in mice. Further modifications of the substituents always lowered the activity. Only a few compds. showed any appreciable activity. 2,4,6-Me2N-(HO)2-Z (in this abstract Z = pyrimidine) ground to pass a 30-mesh sieve, added with stirring during 45 min. to 280 cc. AcOH and 65 cc. HNO3 (d. 1.5) at 20-5°, stirred an addnl. 45 min., the mixture poured into 1350 cc. H2O, the solid separated, washed free from acid, and dried gave 81 g. 5-O2N derivative (I). I (5 g.), 60 cc. POC13, and 20 cc. PhNMe2 heated to 105° (bath temperature), after the vigorous reaction the heating continued 1 hr., excess POC13 removed in vacuo, the residue treated with 200 g. ice, the suspension extracted with four 50-cc. portions of Et2O, the combined exts. dried, filtered, evaporated, and the residue crystallized from petr. ether (b. 60-80°) gave 3.7 g. 4,6-Cl2 compound (II), m.

117-20°. II (14 g.), 90 cc. C<sub>6</sub>H<sub>6</sub>, and 10 cc. aqueous NH<sub>3</sub> (d. 0.880) shaken overnight, the mixture filtered, and the residue (4.2 g.) crystallized twice from dioxane gave the 4,6-(H<sub>2</sub>N)<sub>2</sub> compound, m. 249-50°; evaporation of the filtrate gave a residue which, after chromatography on 120 g. Al<sub>2</sub>O<sub>3</sub> in 30 cc. C<sub>6</sub>H<sub>6</sub> and crystallization from EtOAc-petr. ether afforded 0.5 g. 4-H<sub>2</sub>N compound, m. 132°. To 91 g. Na in 2 l. MeOH was added 509 g. [MeHNC(:NH)NH<sub>2</sub>]<sub>2</sub>H<sub>2</sub>SO<sub>4</sub>, the mixture refluxed 30 min. with stirring, CH<sub>2</sub>(CO<sub>2</sub>Et)<sub>2</sub> added, the heating continued 6 hrs., the mixture cooled, diluted with 5 l. H<sub>2</sub>O, treated with C, filtered, the filtrate acidified to litmus with AcOH, and the precipitate collected to give 183 g. 2,4,6-MeHN(HO)<sub>2</sub>-Z (III);

the mother liquors deposited 15 g. presumably 2-amino-1,4,5,6-tetrahydro-1-methyl-4,6-dioxo-Z, m. above 360°. III (93g.) and 510 g. POCl<sub>3</sub> refluxed 1 hr., the mixture filtered through sintered glass, the filtrate poured on 2250 cc. 32% aqueous NaOH and ice, the separated solid collected, washed with H<sub>2</sub>O, and crystallized from MeOH gave 88 g. 2,4,6-(MeHN)Cl<sub>2</sub>-Z (IV), m. 164°. IV (130 g.) heated 12 hrs. with NaOMe (from 168 g. Na in 570 cc. MeOH), the solution cooled, the precipitate collected, washed with H<sub>2</sub>O, and crystallized from MeOH yielded 95 g. 4,6,2-Cl(MeO)(MeHN)-Z, m. 153°. Similarly was prepared 81% 4,6,2-Cl(MeO)(Me<sub>2</sub>N)-Z (VI), m. 62° (after sublimation at 55°/0.1 mm.), from 4,6,2-Cl<sub>2</sub>(Me<sub>2</sub>N)-Z at room temperature VI (10 g.) heated 30 min. on a steam bath with 50 cc. HCl, the solution cooled, the product collected, and purified by solution in aqueous alkali, treatment with C, and reprecipn. with AcOH gave 5.5 g. 6-HO compound, m. 265° (decomposition). Similarly was obtained from VI 95% 4,6,2-Cl(HO)(Me<sub>2</sub>N)-Z (VII), m. 217°. 4,6,2-ClMe(H<sub>2</sub>N)-Z (28.7 g.) and 78 cc. 19.5% alc. Me<sub>2</sub>NH heated 17 hrs. at 110-20° gave 172 g. 4-Me<sub>2</sub>N derivative, m. 172° (from C<sub>6</sub>H<sub>6</sub>). Ph(H<sub>2</sub>N)CHCOPh.HCl (47 g.) dissolved in 750 cc. H<sub>2</sub>O. basified at 0° with aqueous NH<sub>3</sub>, the base collected, sucked as dry as possible, added to 35 g. 2,4,6-Cl<sub>3</sub>-Z (VIII) in 750 cc. EtOH, the mixture set aside 2 days at room temperature, the precipitate (12 g.) collected, and crystallized from EtOH gave α-(2,4-dichloro-6-pyrimidylamino)deoxybenzoin (IX), m. 165°. p-ClC<sub>6</sub>H<sub>4</sub>CHBzNH<sub>2</sub> (X) (28.5 g.) converted to the base, the latter treated as above with 9 g. VIII, the crude product refluxed 3 hrs. with 10 cc. 19.5% alc. Me<sub>2</sub>NH and 10 cc. EtOH, the solution evaporated to 0.5 its volume, and the solid recrystd. from MeOH gave ω-(4-chloro-2-dimethylamino-6-pyrimidyl-amino)-ω-(p-chlorophenyl)acetophenone, m. 151-2°; the mother liquors gave the 6-Me<sub>2</sub>N isomer, m. 181-2° (from EtOH), and a small amount of another compound believed to be 2,5-di(p-chlorophenyl)-3,6-diphenylpyrazine, m. 239-40°. 4,6,2-Cl<sub>2</sub>(H<sub>2</sub>N)-Z (XI) (33 g.) heated 3 hrs. with 175 cc. 19.5% alc. Me<sub>2</sub>NH, after the initial reaction had subsided the solution cooled, the precipitate (24 g.) collected, and crystallized from MeOH and then from C<sub>6</sub>H<sub>6</sub> gave 4,2,6-Cl(H<sub>2</sub>N)(Me<sub>2</sub>N)-Z, m. 164-5°. Similarly were obtained in 70% yield from the appropriate derivative of XI and an alc. solution of H<sub>2</sub>NCH<sub>2</sub>CO<sub>2</sub>Et, Et 4-chloro-2-methylamino-6-pyrimidylaminoacetate (XII), m. 167°, and Et 4-chloro-2-dimethylamino-6-pyrimidylamino-acetate, m. 121°. 2,4,6-Cl<sub>2</sub>(Me<sub>2</sub>N)-Z (36 g.), 200 cc. EtOH, and 50 cc. 70% aqueous EtNH<sub>2</sub> refluxed 6 hrs., EtOH removed, the mixture diluted with H<sub>2</sub>O, extracted with Et<sub>2</sub>O, the extract dried, Et<sub>2</sub>O removed, the residue dissolved in 70 cc. absolute EtOH, 9 cc. concentrated H<sub>2</sub>SO<sub>4</sub> added (the mixture acid to Congo red), and dry Et<sub>2</sub>O added to a permanent turbidity gave 34 g. 4,6,2-Cl(EtNH)(MeNH)-Z sulfate, m. 148° (from EtOH-Et<sub>2</sub>O). The following compds. were prepared similarly: 4,2,6-Cl(Me<sub>2</sub>N)(MeNH)-Z, m. 78° (from petr. ether); 4,2,6-Cl(Et<sub>2</sub>N)(MeNH)-Z sulfate, m. 148-9° (from EtOH-Et<sub>2</sub>O); 4-chloro-6-methylamino-2-piperidino-Z, m. 118° (from MeOH);

4,6,2-Cl(MeNH)(Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>NH)-Z, m. 99° (from EtOAc-petr. ether). To 17.5 g. VII in 500 cc. H<sub>2</sub>O containing 60 cc. 2N NaOH and 12.6 g. NaHCO<sub>3</sub> was added 4-ClC<sub>6</sub>H<sub>4</sub>N<sub>2</sub>Cl (XIII) [from 12.75 g. 4-ClC<sub>6</sub>H<sub>4</sub>NH<sub>2</sub> (XIV)], the solution stirred overnight, the precipitate collected, washed with H<sub>2</sub>O, EtOH, and Et<sub>2</sub>O, and crystallized from dioxane to give 20 g. 5-p-ClC<sub>6</sub>H<sub>4</sub>N<sub>2</sub> derivative (XV), m. 220-2° (decomposition). 4,6,2,5-Cl(HO)(MeNH)(p-ClC<sub>6</sub>H<sub>4</sub>N<sub>2</sub>)-Z was obtained similarly but could not be purified without decomposition XIII (500 cc. 0.025M) and 46 g. NaOAc.3H<sub>2</sub>O (XVI) added with stirring to 3.8 g. 6,4,2-Me(HO)(Me<sub>2</sub>N)-Z in 500 cc. H<sub>2</sub>O, after 16 hrs. the precipitate collected, washed, dried in air, and recrystd. from BuOH gave 5.5 g. 5-(p-ClC<sub>6</sub>H<sub>4</sub>N<sub>2</sub>) derivative, m. 216-17°. XIII (50 cc. 0.025M) and 40 g. XVI added with stirring to 5.0 g. 4,2,6-Cl(Me<sub>2</sub>N)Z in 70 cc. AcOH, diluted with 200 cc. H<sub>2</sub>O, after 48 hrs. stirring the solid collected, washed with H<sub>2</sub>O, and crystallized twice from EtOH gave 5 g. 5-(p-ClC<sub>6</sub>H<sub>4</sub>N<sub>2</sub>) derivative (XVII), m. 91°. The following N.CX:N.CW:C(N:NR).CY (XVIII) (W = Cl) were prepared (X, Y, R, m.p., crystallization solvent, % yield given): NH<sub>2</sub>, NHMe, p-ClC<sub>6</sub>H<sub>4</sub>, 255°, HCONMe (XIX), 47; NH<sub>2</sub>, NMe<sub>2</sub>, p-ClC<sub>6</sub>H<sub>4</sub>, 204°, XIX-EtOH, 65; NHMe, NH<sub>2</sub>, p-ClC<sub>6</sub>H<sub>4</sub>, 272° (decomposition), XIX, 90; NHMe, NHMe, p-ClC<sub>6</sub>H<sub>4</sub>, 272°, XIX-EtOH, 95; NH<sub>2</sub>, NHMe, p-ClC<sub>6</sub>H<sub>4</sub>, 214°, BuOH, 75; NMe<sub>2</sub>, NH<sub>2</sub>, p-ClC<sub>6</sub>H<sub>4</sub>, 229°, BuOH, 90; NMe<sub>2</sub>, NHMe, Ph, 163°, EtOH, 78; NMe<sub>2</sub>, NHMe, p-ClC<sub>6</sub>H<sub>4</sub>, 183°, BuOH, 90; HNCCH<sub>2</sub>CH<sub>2</sub>NMe<sub>2</sub>, NHMe, p-ClC<sub>6</sub>H<sub>4</sub>, 158°, EtOH, 50. 6,4,2,5-Cl(H<sub>2</sub>N)(Me<sub>2</sub>N)(p-ClC<sub>6</sub>H<sub>4</sub>N<sub>2</sub>)-Z (XX) (2 g.) and 40 cc. saturated alc. NH<sub>3</sub> heated 36 hrs. at 150-60°, the solution cooled, and the product (1.75 g.) crystallized from BuOH gave 6-H<sub>2</sub>N compound, m. 272-3° [HCl salt, m. 301° (decomposition) (from 80% HCO<sub>2</sub>H) (prepared from XIII and 4,6,2-(H<sub>2</sub>N)Z(Me<sub>2</sub>N)-Z in AcOH)]. Similarly were prepared the following XVIII (W = NH<sub>2</sub>, R = p-ClC<sub>6</sub>H<sub>4</sub>) (X, Y, m.p., crystallization solvent, % yield given):

NH<sub>2</sub>,

NHMe, 213°, BuOH, 40 and 80; NH<sub>2</sub>, NMe<sub>2</sub>, 205°, XIX-H<sub>2</sub>O, 96; NH<sub>2</sub>, NH(CH<sub>2</sub>)<sub>3</sub>NEt<sub>2</sub>, 139°, EtOH-H<sub>2</sub>O, 44; NHMe, NH<sub>2</sub>, 241°, BuOH, 70; NHMe, NHMe, 197°, EtOAc, 85 and 92; NHMe, NMe<sub>2</sub>, 184°, XIX-H<sub>2</sub>O, 90 and 79; NH<sub>2</sub>, NHMe, 161°, BuOH, 80; NMe<sub>2</sub>, NHMe, 193°, BuOH, 90; NMe<sub>2</sub>, NMe<sub>2</sub>, 203°, BuOH, 95 and 93; NMe<sub>2</sub>, piperidino, 175°, BuOH, 86; NMe<sub>2</sub>, morpholino, 183°, BuOH, 91; NMe<sub>2</sub>, NH(CH<sub>2</sub>)<sub>2</sub>NEt<sub>2</sub>, 150°, petr. ether, 44; NH(CH<sub>2</sub>)<sub>2</sub>NMe<sub>2</sub>, NHMe, 144°, petr. ether, 90. XVII (5 g.), 100 cc. XIX, and 20 cc. 10% alc. NH<sub>3</sub> heated 64 hrs. at 60°, H<sub>2</sub>O added, and the precipitate crystallized from EtOH gave 4 g. 4-Me<sub>2</sub>N derivative (XXI). m. 145°. XXI was also obtained similarly from XVII and MeOH-Me<sub>2</sub>NH. Similarly were prepared: 2,4,6,5-(H<sub>2</sub>N)(Me<sub>2</sub>N)(MeHN)(p-ClC<sub>6</sub>H<sub>4</sub>N<sub>2</sub>)-Z, m. 192°, and 2,4,6,5-(MeHN)3(p-ClC<sub>6</sub>H<sub>4</sub>N<sub>2</sub>)-Z, m. 155°. 2,4,6,5-(H<sub>2</sub>N)2(MeHN)(p-ClC<sub>6</sub>H<sub>4</sub>N<sub>2</sub>)-Z (5 g.) in 75 cc. EtOH reduced by H over Raney Ni (initial pressure 47 atmospheric) at 90-5° 5 hrs., the mixture acidified with 4 cc. AcOH, filtered through Hyflo Supercel, the residue washed with H<sub>2</sub>O, the combined filtrate and washings evaporated to dryness in vacuo under N, the residue triturated with Et<sub>2</sub>O, dissolved in 10 cc. H<sub>2</sub>O, acidified to Congo red with H<sub>2</sub>SO<sub>4</sub>, EtOH added, and the precipitate crystallized from H<sub>2</sub>O gave 2,4,5,6-(H<sub>2</sub>N)3(MeHN)-Z sulfate (XXII). No satisfactory analytical results were obtained for 2,5,6,4-(H<sub>2</sub>N)2(Et<sub>2</sub>N)(Me<sub>2</sub>N)-Z oxalate, m. 221° (decomposition), but it condensed normally with benzil to the pteridines. The following XC:N.C(NH<sub>2</sub>):C(NH<sub>2</sub>).CY:N were prepared (X, Y, m.p., crystallization solvent, % yield given): NH<sub>2</sub>, NHMe, 250° (decomposition), H<sub>2</sub>O, 89; NH<sub>2</sub>, NMe<sub>2</sub>, 209°, aqueous EtOH, 48; NHMe, NH<sub>2</sub>, 255° (decomposition), H<sub>2</sub>O, 75; NHMe, NHMe, 259°, aqueous EtOH, 80; NHMe, NMe<sub>2</sub>, 193°, aqueous EtOH, 65; NH<sub>2</sub>, NHMe, 293° (decomposition), aqueous EtOH, 49; NMe<sub>2</sub>, NH<sub>2</sub>, 314° (decomposition), H<sub>2</sub>O, 58; NMe<sub>2</sub>, NHMe, 273° (decomposition), H<sub>2</sub>O, 64; NMe<sub>2</sub>, NMe<sub>2</sub>, 182° (decomposition), EtOH, 38; NMe<sub>2</sub>, piperidino, 208° (decomposition), aqueous EtOH, 33; NMe<sub>2</sub>, morpholino, 194° (decomposition), aqueous EtOH, 57. H<sub>2</sub>NCH<sub>2</sub>CH(OEt)<sub>2</sub> (15 g.) and 17.5 g. 6,4,2,5-Cl(MeNH)(Me<sub>2</sub>N)(p-ClC<sub>6</sub>H<sub>4</sub>N<sub>2</sub>)-Z refluxed 24 hrs. in dioxane, the solution evaporated to dryness, the residue (10 g.) triturated with EtOH,

filtered off, and crystallized from petr. ether gave 5-p-chlorophenylazo-2-dimethylamino-4-methylamino-6-pyrimidinylaminoacetaldehyde di-Et acetal, m. 95°. PhCH(NH<sub>2</sub>)CH(OMe)<sub>2</sub> (XXIII) (11 g.) and XVII in 205 cc. dioxane refluxed 4 hrs., the solvent removed, and the product (1.9 g.) crystallized from BuOH gave α-[5-p-chlorophenylazo-2,4-bis(dimethylamino)-6-pyrimidinyl]amino-α-phenylacetaldehyde di-Me acetal, m. 151°. Similarly was prepared from XV α-(5-p-chlorophenylazo-2-dimethylamino-4-hydroxy-6-pyrimidyl)-amino-α-phenylacetaldehyde di-Me acetal (XXIIIa), m. 242° (from BuOH). H<sub>2</sub>NCH<sub>2</sub>C(=NNHCONH<sub>2</sub>)Me.HCl (11 g.) stirred 2 hrs. with cold NaOEt (from 1.5 g. Na in 60 cc. EtOH), 9.3 g. XV in 140 cc. XIX added, stirring continued 15 hrs., the semicarbazone, m. 243°, collected, washed with H<sub>2</sub>O and EtOH, dissolved in 25 cc. AcOH and 150 cc. 2N aqueous HCl, the solution kept overnight, filtered, the filtrate evaporated to dryness, and the residue (6.6 g.) crystallized from EtOH gave 5-p-chlorophenylazo-2-dimethylamino-4-hydroxy-6-pyrimidinylaminoacetone HCl salt, m. 217°. The following compds. were prepared similarly: ω-(5-p-chlorophenylazo-2-dimethylamino-4-hydroxy-6-pyrimidyl)aminoacetophenone (XXIV) HCl salt monohydrate, m. 229° (from EtOH) [XXIV semicarbazone, m. 263° (decomposition) (from XIX-EtOH)]; 4-chloro-ω-(5-p-chlorophenylazo-4-hydroxy-2-methylamino-6-pyrimidyl)aminoacetophenone (XXIVa), m. 258° (decomposition) [semicarbazone, m. 264° (from XIX)]; 4'-Cl derivative of XXIV, m. 244° (decomposition) (from XIX-EtOH) [semicarbazone, m. 255° (decomposition) (from XIX-EtOH)]. IX (17.5 g.) and 60 cc. 2.5M alc. Me<sub>2</sub>NH refluxed 3 hrs., cooled, the solid (17 g.) collected, dissolved in 200 cc. AcOH together with 19 g. XVI, a solution of XIII (from 6 g. XIV) added, after stirring 4 days the resulting precipitate collected, washed with H<sub>2</sub>O and EtOH, and crystallized from BuOH gave 10 g. α-(4-chloro-5-p-chlorophenylazo-2-dimethylamino-6-pyrimidyl)aminodeoxybenzoïn (XXV), m. 254° (decomposition). XXV (10 g.) refluxed 20 hrs. with 340 cc. 2.5M alc. Me<sub>2</sub>NH gave 5.5 g. 4-Me<sub>2</sub>N derivative, m. 179° (from EtOH). The following compds. were prepared similarly: ω-(p-chlorophenyl)-ω-(4-chloro-5-p-chlorophenylazo-2-dimethylamino-6-pyrimidyl)aminoacetophenone, m. 248° (decomposition) (from BuOH), and ω-(p-chlorophenyl)-ω-(5-p-chlorophenylazo-2-dimethylamino-6-pyrimidyl)aminoacetophenone, m. 196° (from BuOH). 4-ClC<sub>6</sub>H<sub>4</sub>COCH(NH<sub>2</sub>)Ph.HCl (14.1 g.) dissolved in 800 cc. H<sub>2</sub>O, made alkaline with aqueous NH<sub>3</sub>, the base collected, dried over

P205,

added to 7.8 g. XV in 400 cc. XIX, the mixture stirred 24 hrs. at room temperature, the solid collected, and crystallized from XIX-EtOH gave 7 g. 4-chloro-ω-(5-p-chlorophenylazo-2-dimethylamino-4-hydroxy-6-pyrimidyl)amino-ω-phenylacetophenone, m. 239°. To 5.6 g. H<sub>2</sub>NCH<sub>2</sub>CO<sub>2</sub>Et was added 5.5 g. IX in 150 cc. dioxane, the whole refluxed 8 hrs., cooled, filtered, the filtrate diluted with H<sub>2</sub>O, the precipitate collected, crystallized from EtOAc-petr. ether, and recrystd. from EtOH to give 2 g. Et (4-amino-5-p-chlorophenylazo-2-dimethylamino-6-pyrimidyl)aminoacetate, m. 139°. (For addnl. compds. of this type, cf. Brit. 763,043). Similarly was prepared Et (5-p-chlorophenylazo-2-dimethylamino-4-hydroxy-6-pyrimidyl)-aminoacetate, m. 218°. A solution (17 cc. 0.01 M) of XIII added to 2.5 g. XII in 160 cc. 50% AcOH containing 10 g. XVI, the whole stirred 12 hrs., the precipitate collected, and crystallized from BuOH gave 2 g. Et (4-chloro-5-p-chlorophenylazo-2-methylamino-6-pyrimidyl)aminoacetate, m. 218°. Similarly was prepared Et (4-chloro-5-p-chlorophenylazo-2-dimethylamino-6-pyrimidyl)aminoacetate, m. 214° (from dioxane). ω-(5-p-Chlorophenylazo-2-dimethylamino-4-hydroxy-6-pyrimidyl)-aminoacetophenone (1.2 g.) in 60 cc. AcOH treated at the b.p. with 1.1 g. Zn dust in an N atmosphere, the mixture heated 1 hr. more, filtered hot, the filtrate evaporated in vacuo, the residual oil triturated with Et<sub>2</sub>O, filtered, the residue washed with Et<sub>2</sub>O, dissolved in dilute HCl, the solution evaporated

in

vacuo, the residue triturated with EtOAc, collected, dissolved in H<sub>2</sub>O, the solution made alkaline with aqueous NH<sub>3</sub>, and the product (0.1 g.) crystallized from EtOH

gave 2-dimethylamino-7,8-dihydro-4-hydroxy-6-phenyl-Y-0.5 H<sub>2</sub>O (XXVI), m. 311°, λ 270 mμ (Elcm.1% 750 in N HCl). Similarly were prepared the following compds.: 2,4-bis(dimethylamino)-7,8-dihydro-6,7-diphenyl-Y, m. 278°; 7-p-chlorophenyl-2-dimethylamino-6,7-dihydro-4-methylamino-6-phenyl-Y, m. 267-9° (not analytically pure); 6-p-chlorophenyl-2-dimethylamino-7,8-dihydro-4-hydroxy-7-phenyl-Y HCl salt, m. 346°. XXIa (2.95 g.) in 300 cc. XIX shaken in H (initial pressure 2 atmospheric) 2 hrs. with 5 g. Raney Ni, the catalyst and XIX removed,

the residue triturated with Et<sub>2</sub>O, the solid collected, and recrystd. from aqueous XIX gave 1.8 g. 6-p-chlorophenyl-2-dimethylamino-7,8-dihydro-4-hydroxy-Y, m. 370°. XXIIa (5 g.) treated with 10 cc. concentrated HCl in 100 cc. AcOH, after 1 hr. at room temperature H<sub>2</sub>O added, the precipitate collected, reduced

with H over Raney Ni, the catalyst and solvent removed, the oily residue mixed with 10 cc. AcOH, triturated twice with Et<sub>2</sub>O, the remaining oil dissolved in 2N HCl, the resulting solid suspended in H<sub>2</sub>O, treated with dilute aqueous NH<sub>3</sub> until the mixture was just alkaline to Brilliant Yellow, the precipitate

(2.3 g.) collected, and crystallized from aqueous XIX gave 7,4,2-Ph(HO)(Me<sub>2</sub>N)-Y, m. 326° (decomposition), λ 355 mμ (Elcm.1% 800, in N HCl).

6,4,5,2-HO(H<sub>2</sub>N)2(Me<sub>2</sub>N)-Z sulfate (XXVII) (10.7 g.), 6.1 g. PhCOCHO.H<sub>2</sub>O, 27 g. XVI, and 400 cc. 50% aqueous EtOH refluxed 15 min., the mixture cooled, the solid collected, and crystallized from EtOH gave 7.5 g. 6,4,2,5-HO(H<sub>2</sub>N)(Me<sub>2</sub>N)(PhCOCH:N)-Z, m. 267° (decomposition). Me 3-amino-5,6-diphenylpyrazine-2-carboxylate (1 g.) heated 16 hrs. at 160° with 10 g. MeNH<sub>2</sub> in 55 cc. EtOH gave 0.5 g.

2-amino-3-N-methylcarbamoyl-5,6-diphenylpyrazine, 197-8° (from EtOH). 2,4-Disubstituted pteridines were prepared by the following methods (for addnl. compds., cf. Brit. 763,044, C.A. 51, 13944a): (1) To 0.2 g. XXVI in 50 cc. 0.5N NaOH was added 0.1 g. KMnO<sub>4</sub> in 15 cc. H<sub>2</sub>O with stirring over 15 min., after a further 1.5 hrs. EtOH added, MnO<sub>2</sub> filtered off, washed with H<sub>2</sub>O, the filtrate and washings concentrated to about 50 cc., acidified to Congo red with HCl, neutralized with aqueous NH<sub>3</sub>, and the product crystallized from EtOH gave 6,4,2-Ph(HO)(Me<sub>2</sub>N)-Y (XXIX), m. 322° (decomposition), λ 280 (Elcm.1% 910), 355 mμ (Elcm.1% 395). (2a) 4,5,2,6-(H<sub>2</sub>N)2(Me<sub>2</sub>N)2-Z sulfate (2.94 g.), 6.8 g. XVI, 1.5 g. XXVIII, and 50% aqueous EtOH-refluxed 15 min., the solution cooled, the solid collected, dissolved in 2N AcOH, the solution treated with C, filtered, the filtrate made alkaline with aqueous NH<sub>3</sub>, and the precipitate crystallized from BuOH and then from EtOH

gave 7,2,4-Ph(Me<sub>2</sub>N)2-Y, m. 191°. (2b) XXVII (7.43 g.), 250 cc. 6N H<sub>2</sub>SO<sub>4</sub>, 3.7 g. XXVIII, and 250 cc. EtOH refluxed 2 hrs., EtOH removed in vacuo, the residual solution cooled in ice, made alkaline with aqueous NH<sub>3</sub>, filtered,

the filtrate acidified to litmus with dilute AcOH, and the precipitate crystallized from

XIX-EtOH gave 6,4,2-Ph(HO)(Me<sub>2</sub>N)-Y, m. 332°. (2c) XXII (10.8 g.), 14.8 g. benzil, 24 g. XVI, 400 cc. EtOH, and 100 cc. H<sub>2</sub>O refluxed 5 hrs., the mixture cooled, the precipitate collected, extracted with 0.5N HCl, and the extract

basified with aqueous NH<sub>3</sub> gave 6,7,2,4-Ph<sub>2</sub>(H<sub>2</sub>N)(Me<sub>2</sub>N)-Y (XXX), m. 272° (from EtOH). (3) 6,7,4,2-Ph<sub>2</sub>(HO)(H<sub>2</sub>N)-Y (XXXI) (2 g.) and 120 cc. redistd. POC13 refluxed 2 hrs., excess POC13 removed in vacuo, the residue heated 1 hr. with 100 cc. 2.5 M alc. MeNH<sub>2</sub>, the alc. removed, the solid extracted with 0.5N HCl, and the extract basified with aqueous NH<sub>3</sub> and crystallized from EtOH

gave XXX, m. 272°. In a similar series of reactions, XXIX yielded



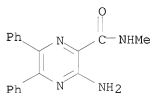
6,2,4-Ph(Me2N)2-Y, m. 190°, and 6,4,2-Ph(EtO)(Me2N)-Y, m. 200° (from EtOH). By using the conditions of Cain, et al. (C.A. 43, 4268e), there was obtained from XXXI a product (XXXII), m. 253-9°.

XXXII extracted with 1.5N AcOH left 2-amino-3-N-methylcarbamoyl-5,6-diphenylpyrazine, m. 197-8°; the extract basified with aqueous NH3 and the precipitate crystallized from EtOH gave 6,7,2,4-Ph2(Me2N)2-V (XXXIII), m. 266-7°, undepressed with material obtained by condensing 4,5,2,6-(H2N)2(MeHN)2-Z with benzil. 6,7,2,4-Ph2(H3)(H2N)-Y (XXXIV) treated with alc. MeNH2 under the conditions described by Taylor and Cain (C.A. 47, 137h) also gave XXXIII. XXXIV and alc. Me2NH similarly treated gave a product (XXXV), m. 186-215°. XXXV triturated with cold 0.5N AcOH left a residue which, when repeatedly crystallized from MeOH, m. 211°, undepressed with authentic 6,7,2,4-Ph2(Me2N)2-Y obtained by condensing 4,5,2,6-(H2N)2-(Me2N)2-Z with benzil; the acid extract basified with aqueous NH3, and the precipitate crystallized from BuOH gave 6,7,4,2-Ph2(H2N)(Me2N)-Y, m. 236°, undepressed with material obtained by condensing 4,5,6,2-(H2N)3(Me2N)-Z with benzil (4) 7,2,4-Ph(MeHN)2-Y (0.3 g.) and 50 cc. N HCl refluxed 20 hrs., the solution cooled to 50°, made faintly alkaline to Brilliant Yellow with aqueous NH3, the precipitate collected, washed with

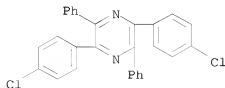
H2O, dried, and crystallized from XIX gave 7,4,2-Ph(HO)(MeHN)-Y, m. 387° (decomposition), undepressed with material prepared by 2a, λ 250 mμ (Elcm.1% 700). The following substituted pteridines, N:CN.N:CY.C:C.N:CR.CR':N, were prepared (X, Y, R, R', m.p., crystallization solvent,

method of preparation, % yield given): NH2, NHMe, H, H, 248° H2O, 2c, 26; NH2, NHMe, Ph, Ph, 272°, EtOH, 2c and 3, 73.5; NH2, NMe2, Ph, Ph, 322° (decomposition), XIX, 2c, 63; NH2, NH(CH2)3-NEt2, Ph, Ph, 201°, EtOH, 2c, 50; NHMe, OH, Ph, H, 356° (decomposition) [λ 280 mμ (Elcm.1% 966), 350 mμ (Elcm.1% 566)], XIX, 2b, 75; NHMe, OH, H, Ph, 387° (decomposition), XIX, 2a and 4, 80 and 52; NHMe, OH, p-ClC6H4, H, 370° (decomposition), XIX-EtOH, 1 and 2b, 50 and 26; NHMe, OH, H, p-ClC6H4, 363° (decomposition), XIX, 2a and 4, 65 and 80; NHMe, OH, Ph, Ph, 365° (decomposition), XIX, 4, 80; NHMe, NH2, H, H, 242°, H2O, 2c, 72; NHMe, NH2, Me, Me, 281°, EtOH, 2c, 51; NHMe, NH2, Ph, Ph, 307°, XIX, 2c, 75; NHMe, NHMe, H, H, 214°, EtOH, 2c, 50; NHMe, NHMe, Me, Me, 266°, EtOH, 2c, 28; NHMe, NHMe, Ph, H, 264°, XIX, 3, 32; NHMe, NHMe, H, Ph, 256° [λ 365 mμ (Elcm.1% 950)], MeOH, 2b, 30; NHMe, NHMe, H, p-ClC6H4, 294° [λ 365 mμ (Elcm.1% 925)], XIX, 2b, 25; NHMe, NHMe, Ph, Ph, 262°, XIX-EtOH, 2c, 49; NHMe, NHMe, o-ClC6H4, o-ClC6H4, 265°, BuOH, 2c, 22; NHMe, NHMe, m-ClC6H4, m-ClC6H4, 256°, MeOH, 2c, 31; NHMe, NHMe, p-ClC6H4, p-ClC6H4, 323° XIX, 2c, 63; NHMe, NHMe, p-MeOC6H4, p-MeOC6H4, 259°, EtOH, 2c, 24; NHMe, NHMe, 3,4-CH2O2C6H3, 3,4-CH2O2C6H3, 297°, XIX-EtOH, 2c, 28; NHMe, NHMe, R and R' = 9,10-phenanthrylene, 311°, XIX, 2c, 66; NHMe, NHMe, R and R' = 7,8-acenaphthylene, 307°, XIX, 2c, 40; NHMe, NHMe, 2-furyl, 2-furyl, 218°, EtOAc, 2c, 24; NHMe, NHMe, R and R' = 2,3-indolo, 338°, XIX, 2c, 75; NHMe, NMe2, Ph, Ph, 306°, XIX, 2c, 60; NHMe, NHMe, Ph, Ph, 249°, EtOH, 2c, 21; NMe2, OH, Ph, H, 336° (decomposition), EtOH, 1, 2a, and 4, 15 and 90; NMe2, OH, H, Ph, 325° (decomposition), XIX-EtOH, 1, 2b, and 4, 65, 90, and 90; NMe2, OH, p-ClC6H4, H, 377° (decomposition), XIX-EtOH, 1, 85; NMe2, OH, Ph, Ph, 361°, XIX-EtOH, 2c, 33; NMe2, OH, p-ClC6H4, Ph, 350°, BuOH, 1, 85; NMe2, OEt, Ph, H, 200°, MeOH, EtOH on 4-Cl compound, 30; NMe2, NH2, Ph, Ph, 239°, BuOH, 2c, 63; NMe2, NHMe, Ph, Ph, 205°, EtOAc, 2c, 43; NMe2, NHMe, Ph, p-ClC6H4, 239° EtOH, 1, 70; NMe2, NMe2, iso-Pr, iso-Pr, 150°, aqueous EtOH, 2c, 30; NMe2, NMe2, Ph, H, 188°, EtOH, 2a and 3, 29 and 40; NMe2, NMe2, H, Ph, 191°, EtOH, 2b and 3, 37 and 80; NMe2, NMe2, Ph, Ph, 211°,

EtOAc, 2c, 55; NMe2, piperidino, Ph, Ph, 207°, aqueous EtOH, 2c, 75; NMe2, morpholino, Ph, Ph, 216°, EtOH, 2c, 71. To a solution of PhCH:CHOAc in 290 cc. CC14 was added 39 cc. Br in 40 cc. CC14 with stirring below 10° during 1.5 hrs., 290 cc. MeOH added, stirring continued 12 hrs. more below 10°, after a further 48 hrs. the mixture poured into ice H2O, the separated oil collected, washed with 5% aqueous NaHCO3, dried, and distilled in the presence of a little Na2CO3 to give 122 g. PhCHBrCH(OMe)2 (XXXVI), b14 138-40°. XXXVI (122 g.), 183 g. PhCH2NH2, and a trace of NaI heated 1 hr. at 140°, when the reaction had moderated heating continued 2 hrs., the mixture cooled, poured into H2O, the product extracted with Et2O, the extract dried, and rectified gave 89 g. PhCH(CH2Ph) CH(OMe)2 (XXXVII), b0.2 121-48°. XXXVII hydrogenated in 300 cc. MeOH over 25 g. 5% Pd-C at 100-5° with an initial pressure of 95 atmospheric, the catalyst removed, and the filtrate rectified gave 47 g. XXIII, b18, 134-6°. BzCH2NH2.HCl (56 g.) dissolved in 350 cc. EtOH with gentle warming, the solution cooled rapidly to room temperature, 25 g. NH2NHCONH2 added, the mixture set aside several hrs., the crystals filtered off, and crystallized from EtOH gave the semicarbazone, m. 107-8°. To 28 g. 4-ClC6H4CH2Bz in 50 cc. dry Et2O saturated with HCl at 0° was added 7.5 g. BuNO2 in 50 cc. Et2O, the precipitate collected, and crystallized from aqueous MeOH giving the hydroxyimino compound (XXXVIII), m. 121-3°. XXXVIII reduced at room temperature and pressure in 350 cc. EtOH containing 12 cc. concentrated HCl over Pd-C, the catalyst and solvent removed, and the product (6 g.) crystallized from 2N HCl and then from MeOH-Et2O gave X, m. 248° (decomposition).  
 IT 60980-98-5P, Pyrazinamide, 3-amino-N-methyl-5,6-diphenyl-103277-63-0P, Pyrazine, 2,5-bis(p-chlorophenyl)-3,6-diphenyl-(?)  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 60980-98-5 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-N-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 103277-63-0 CAPLUS  
 CN Pyrazine, 2,5-bis(p-chlorophenyl)-3,6-diphenyl- (6CI) (CA INDEX NAME)



DOCUMENT NUMBER: 51:76966  
ORIGINAL REFERENCE NO.: 51:13869d-i, 13870a-c  
TITLE: Syntheses in the quinazolone series. VI. Synthesis of 1,2,3,4-tetrahydro-2-aryl-4-oxoquinazolines  
AUTHOR(S): Kilroe Smith, T. A.; Stephen, Henry  
CORPORATE SOURCE: Univ. Witwatersrand, Johannesburg, S. Afr.  
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AB cf. C.A. 51, 9626b. N2-Arylideneorthoanilamides (o-arylideneaminobenzamides) (I), readily prepared by condensation of aromatic aldehydes with o-H2NC6H4CONH2, are characterized by the ease with which they isomerize to 1,2,3,4-tetrahydro-2-aryl-4-oxoquinazolines (II). The aromatic aldehyde (1 mole) and 1 mole o-H2NC6H4CONH2 refluxed in EtOH, the solution cooled, filtered, and the product crystallized from EtOH gave the following I (aryl group, m.p., and % yield given): o-HOC6H4, 165°, 81; o-MeOC6H4, 159°, 77; m-HOC6H4, 146°, 70; p-HOC6H4, 160°, 70; p-MeOC6H4, 158°, 61; 2,4-(HO)2C6H3, 190°, 90; 2,4-(MeO)2C6H3, 160°, 88; 2,4-(EtO)2C6H3, 177°, 87; 2,4-EtO(HO)C6H3, 180°, 72; 2,4-HO(EtO)C6H3 (Ia), isomerized, 66; 3,4-HO(MeO)C6H3 (Ib), 153°, 50; 3,4-MeO(HO)C6H3 (Ic), 187°, 81; 3,4-EtO(HO)C6H3, 187°, 97; 3,4-(MeO)2C6H3, 165°, 84; 3,4-EtO(MeO)C6H3, 152°, 60; 2,3-HO(MeO)C6H3, 168°, 81; o-O2NC6H4, 174°, 86; m-O2NC6H4, 199°, 95; p-O2NC6H4, 191°, 93; PhCH:CH, 210°, 90; and 2,3,4-HO2C(MeO)2C6H2, 208°, 96. Ia, Ib, and Ic isomerized during recrystn. from EtOH and were alkylated for identification and analysis. The I refluxed 30 min. with N HCl, then with 2N NaOH containing EtOH, or heated above the m.p. in vacuo in some instances gave good yields of the II (aryl, m.p., and % yield from the acid (a), base (b), or by heating (c) given): Ph, 228°, -; p-MeC6H4, 230°, -; o-HOC6H4, 300°, 82a; m-HOC6H4, 209°, 100b; p-HOC6H4, 332°, 70a; o-MeOC6H4, 181°, 88b; p-MeOC6H4, 195°, 62a; 2,4-HO(EtO)C6H3, 305°, 100c; 2,4-(EtO)2C6H3, 149°, 94b; 2,4-(MeO)2C6H3, 187°, 100b; 2,3-HO(MeO)C6H3, 279°, 87a; 3,4-MeO(HO)C6H3, 224°, 92a; 3,4-HO(MeO)C6H3, 191°, -; 3,4-EtO(MeO)C6H3, 89°, -; 3,4-EtO(HO)C6H3, 218°, -; 3,4-(MeO)2C6H3, 226°, 100b; o-O2NC6H4, 192°, 96b; PhCH:CH, 294°, 58b; 3,4-(CH2O2)C6H3, 202°, -; 2,3,4-HO2C(MeO)2C6H2, 296°, 100b, 100c. II in dry Me2CO treated in a period of 2-3 hrs. with KMnO4 in dry Me2CO, the excess KMnO4 removed with NaHSO3, filtered, the Me2CO evaporated, and the residue crystallized from MeOH or EtOH gave 2-aryl-4-quinazolinones (III) (aryl, m.p., and % yield given): Ph (IIIa), 238°, 70; p-MeC6H4 (IIIb), 241°, 73; p-MeOC6H4, 208°, 50; p-MeOC6H4, 247°, 98; o-O2NC6H4, 237°, 95; m-O2NC6H4, 354°, 96; p-O2NC6H4, 365°, 90; 2,4-(MeO)2C6H3, 204°, 75; 2,4-(EtO)2C6H3, 174°, 87; 3,4-(MeO)2C6H3, 247°, 65; 3,4-(CH2O2)C6H3, 279°, 75; 3,4-EtO(MeO)C6H3, 239°, 90; PhCH:CH, 252°, 44 (cf. Stephen and Wadge, C.A. 51, 6649e). BzH (10.6 g.) and 15.1 g. o-H2NC6H4CO2Me in petr. ether (b. 60-80°) kept 3 days at 0° (CO2 atmospheric) and the product (75%) crystallized from petr. ether (b. 40-60°) gave o-PhCH(OH)NHC6H4CO2Me (IV), m. 77°. Similar condensation with p-MeC6H4CHO gave the corresponding o-[4-MeC6H4CH(OH)NH]C6H4CO2Me (IVa), m. 79°. IV and IVa kept 2 weeks at 0° in EtOH saturated with NH3 gave 41% IIIa and 58% IIIb. BzH (4 g.) and 10 g. o-H2NC6H4CO2Me warmed in 50 cc. EtOH containing a trace of HCl, and the orange solution refluxed 40 min. and filtered hot gave 8.6 g. white solid, m. 265-75°, yielding on extraction with Me2CO 6.9 g. insol. 1,2,3,4-tetrahydro-3-(o-carbomethoxyphenyl)-4-oxo-2-phenylquinazoline and 1.7 g. Me2CO-soluble (o-MeO2CC6H4NH)2CHPh, m. 188-90°. Refluxing 10.3

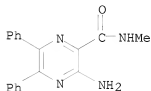
g. o-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H and 12.5 g. 2,4-HO(EtO)C<sub>6</sub>H<sub>3</sub>CHO in EtOH gave 19.8 g. 2-[o-2,4-HO(EtO)C<sub>6</sub>H<sub>3</sub>CH:N]C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H, m. 206°. Similarly were prepared the corresponding 2,4-EtO(HO) and 2,3-HO(MeO) analogs, m. 211° and 119°, in 97 and 80% yields, resp.

IT 60980-98-5

(Derived from data in the 6th Collective Formula Index (1957-1961))

RN 60980-98-5 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



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ACCESSION NUMBER: 1957:43374 CAPLUS

DOCUMENT NUMBER: 51:43374

ORIGINAL REFERENCE NO.: 51:8110d-i,8111a-b

TITLE: Some derivatives of 2,5-dimethyl-3,6-diphenylpyrazine

AUTHOR(S): Beech, W. F.

CORPORATE SOURCE: Imperial Chem. Ind. Ltd., Blackley, Manchester, UK

SOURCE: Journal of the Chemical Society (1955) 3094-8

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LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 51:43374

AB The condensations of PhN<sub>2</sub>Cl and derivs. bearing Me, MeO, Cl, MeO<sub>2</sub>C, and AcNH substituents with AcCH:NOH (I) afforded derivs. of AcCPh:NOH (II) which, on reduction followed by self-condensation, gave aryl-substituted 2,5-dimethylpyrazines. Nitration of 2,5-dimethyl-3,6-diphenylpyrazine (III) and of its N,N'-dioxide yielded principally m-dinitro derivs. AcCH<sub>2</sub>CO<sub>2</sub>Et (260 g.) was shaken with a cold solution of 130 g. KOH in 1300 cc. water, and after 24 hrs. at 15-25°, 161 g. NaNO<sub>2</sub> added with stirring followed by dilute H<sub>2</sub>SO<sub>4</sub> (244 cc. containing 122 cc. of acid, d. 1.84) at 0-8° to give 139 g. I, m. 65-7°. A PhN<sub>2</sub>Cl solution was introduced below the surface of a stirred solution of 100 g. I, 672 g. NaOAc, 25 g. CuSO<sub>4</sub>, and 4 g. anhydrous Na<sub>2</sub>SO<sub>3</sub> in 680 cc. water at 10-20°. After 1 hr. at 20-25°, the solution was filtered and the residue extracted with 1600 cc. hot N NaOH to give 134 g. II, m. 165-6° (from water). Similarly prepared were 70% 1-(p-carboxyphenyl)-1-hydroxyiminoacetone (IV), m. 186° (from water), and 60% 1-(3-pyridyl)-1-hydroxyiminoacetone (V), m. 201-2° (from MeOH). Lime dust (80 g.) was added portionwise to a stirred solution of 60 g. II in 600 cc. 5N NaOH at 25-30°, the mixture stirred 2 hrs., diluted with 600 cc. water, and filtered, the product extracted with 500 cc. hot CHCl<sub>3</sub>, and air bubbled through the extract 15 min. After drying, the solution was evaporated and the residue distilled at 1 mm., giving 19.1 g. III, m. 126° (from dilute AcOH). Similarly prepared were the following 2,5-dimethyl-3,6-diarylpyrazines (aryl group and m.p. given): o-MeC<sub>6</sub>H<sub>4</sub> (VI), 110-111°; m-ClC<sub>6</sub>H<sub>4</sub> (VII), 160°; p-ClC<sub>6</sub>H<sub>4</sub> (VIII), 224-5°; 3,4-MeO(AcNH)C<sub>6</sub>H<sub>3</sub> (VIIIa), 322°; 3-pyridyl (IX), 202-3° [dimethiodide, m. 250° (decomposition)]; p-HO<sub>2</sub>CC<sub>6</sub>H<sub>4</sub> (X), above 320°; p-AcNHC<sub>6</sub>H<sub>4</sub> (Xa), above 300°; p-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub> (Xb), m. 277°. From X were prepared the diamide (XI), m. above 340°, and the di-Me ester (XII), m. 243-4°. XI by Hofmann degradation yielded Xb. VIIIa hydrolyzed with 5N HCl gave the corresponding diamine

(XIII), m. 221-3° (from EtOCH<sub>2</sub>CH<sub>2</sub>OH). III (5.6 g.) in 25 cc. H<sub>2</sub>SO<sub>4</sub> (d. 1.84) was treated with 2.2 cc. HNO<sub>3</sub> (d. 1.5) and 7 cc. H<sub>2</sub>SO<sub>4</sub> (d. 1.84) at 5-10°. The temperature rose spontaneously to 40-2° and the mixture was stirred 5 min. The solution was poured on ice, and the product collected to give 4.72 g. 2,5-dimethyl-3,6-bis-(m-nitrophenyl)pyrazine (XIV), m. 285-6° (from pyridine). XIV (4.72 g.) refluxed 2 hrs. with a solution of 30 g. SnCl<sub>2</sub> in 100 cc. HCl (d. 1.18), the solution cooled, and the product collected and treated with concentrated aqueous NaOH followed

by

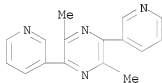
continuous extraction with EtOH afforded 2.7 g. 2,5-bis(m-aminophenyl)-3,6-dimethylpyrazine (XV), m. 235-6°. XV (2.42 g.) dissolved in 80 cc. H<sub>2</sub>O and 5 cc. HCl (d. 1.18) and the solution diazotized at 25° by 8.3 cc. 2N NaNO<sub>2</sub> and treated with 2.5 g. CuCl in 75 cc. HCl (d. 1.18) gave VII. III (10.4 g.) was heated 24 hrs. at 55-60° with 18 cc. 30% H<sub>2</sub>O<sub>2</sub> and 90 cc. AcOH, 46 cc. peroxide added, heating continued 24 hrs. and the solution diluted with 1 l. H<sub>2</sub>O and basified with NaOH to give 10.1 g. dioxide (XVI), m. 259-60° (from MeOH or EtOH). A mixture of 3 cc. HNO<sub>3</sub> (d. 1.5) and 12 cc. H<sub>2</sub>SO<sub>4</sub> (d. 1.84) was added dropwise to a solution of 8.7 g. XVI in 36 cc. H<sub>2</sub>SO<sub>4</sub> (d. 1.84) with stirring at 5-10°. The solution was stirred 0.5 hr. (the temperature rising to 25°) and poured on ice and the product (9.25 g.) collected to give from AcOH 5.5 g. 2,5-dimethyl-3,6-bis(m-nitrophenyl)pyrazine 1,4-dioxide (XVII), m. about 300° (decomposition). Reduction of XVII by refluxing with granulated tin and HCl gave XV, diazotization of which followed by the Sandmeyer reaction afforded VII.

IT 101351-78-4P, Pyrazine, 2,5-dimethyl-3,6-di-3-pyridyl-  
11527-18-5P, Pyrazine, 2,5-dimethyl-3,6-di-3-pyridyl-,  
dimethiodide

RL: PREP (Preparation)  
(preparation of)

RN 101351-78-4 CAPLUS

CN Pyrazine, 2,5-dimethyl-3,6-di-3-pyridyl- (6CI) (CA INDEX NAME)



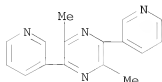
RN 111527-18-5 CAPLUS

CN Pyrazine, 2,5-dimethyl-3,6-di-3-pyridyl-, dimethiodide (6CI) (CA INDEX NAME)

CM 1

CRN 101351-78-4

CMF C16 H14 N4



CM 2

CRN 74-88-4  
CMF C H3 I

H<sub>3</sub>C-I

L14 ANSWER 359 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1957:34890 CAPLUS

DOCUMENT NUMBER: 51:34890

ORIGINAL REFERENCE NO.: 51:6651c-i,6652a-h

TITLE: Nucleophilic displacements on difunctional pyrazines

AUTHOR(S): Karmas, George; Spoerri, Paul E.

CORPORATE SOURCE: Polytech. Inst. of Brooklyn, Brooklyn, NY

SOURCE: Journal of the American Chemical Society (1957), 79, 680-4

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB 2-Bromopyrazine (16.6 g.), 5.7 cc. Br, 0.1 cc. PBr<sub>3</sub>, and 5 mg. FeBr<sub>3</sub> heated 3 hrs. at 95°, the solid mass hydrolyzed on 200 g. ice layered with 100 cc. Et<sub>2</sub>O, the Et<sub>2</sub>O layer dried and distilled, and the distillate, b<sub>14</sub> 90-110°, recrystd. from 10 cc. MeOH and chilled to -10° yielded 5.5 g. 2,3-dibromopyrazine (I), white prisms, m. 57-8°; 2nd crop, 2.2 g., m. 56-8°. 2,3-Dibromo-5,6-dimethylpyrazine (5.0 g.) in 40 cc. MeOH refluxed 6 hrs. with 0.44 g. Na in 60 cc. absolute MeOH, poured into 600 cc. H<sub>2</sub>O, and extracted with pentane

gave 3.4 g. 2-bromo-3-methoxy-5,6-dimethylpyrazine, large white prisms, m. 74-5°. 2,3-Dibromo-5,6-diphenylpyrazine (3.2 g.) in 150 cc. dry C<sub>6</sub>H<sub>6</sub> refluxed 30 hrs. with 0.20 g. Na in 300 cc. absolute MeOH and evaporated

to dryness, and the residue leached with H<sub>2</sub>O and recrystd. from 50 cc. Me<sub>2</sub>CO yielded 2.4 g. 2-bromo-3-methoxy-5,6-diphenylpyrazine (II), small white prisms, m. 182-3°. 2,5-Dibromo- (III) or 2,5-dichloro-3,6-diphenylpyrazine (IV) (0.0128 mole) and 2.3 g. Na in 160 cc. absolute MeOH or EtOH refluxed 6 hrs. and poured into 700 cc. H<sub>2</sub>O gave 90% 2-bromo-5-methoxy-3,6-diphenylpyrazine (V), m. 137-8°, 79% 5-EtO analog (VI) of V, m. 100-1°, and 80% 2-Cl analog of VI, m. 102-3°, resp. I (7.5 g.) and 4.6 g. Na in 200 cc. MeOH refluxed 10 hrs., 150 cc. MeOH distilled, the residue poured into 300 cc. H<sub>2</sub>O, and the product isolated with Et<sub>2</sub>O gave 2.1 g. 2,3-dimethoxypyrazine (VII), colorless oil, b<sub>50</sub> 108-10°, n<sub>D</sub>18 1.5133. 2,3-Dichloro-5,6-dimethylpyrazine (VIII) (5 g.) treated with a 10-fold excess of NaOMe in MeOH gave similarly 3.8 g. 2,3-dimethoxy-5,6-dimethylpyrazine (IX), large white prisms, m. 62-3° (from hexane). 5,6-Di-Ph analog of VIII (3 g.) refluxed 12 hrs. with 2.3 g. Na in 200 cc. MeOH and poured into 700 cc. H<sub>2</sub>O gave 2.2 g. 5,6-di-Ph analog (X) of IX, small cream flakes, m. 140-1° (from EtOH). 2,5-Dichloro-3,6-dimethylpyrazine (XI) (2.4 g.) and 35 cc. 20% NaOMe in MeOH heated 18 hrs. in a sealed tube at 120°, the mixture washed with MeOH into 300 cc. H<sub>2</sub>O, and the product isolated with pentane gave 57% 2,5-dimethoxy-3,6-dimethylpyrazine (XII), b<sub>14</sub> 103-4°, m. 63-5° (from pentane). 2-Chloro-5-methoxy-3,6-diphenylpyrazine (3.0 g.) and 30 cc. 20% NaOMe in MeOH heated 20 hrs. in a sealed tube at 135°, the mixture washed with MeOH into 300 cc. H<sub>2</sub>O, and the product isolated with CHCl<sub>3</sub> gave 75% 3,6-di-Ph analog (XIII) of XII, yellow needles, m. 146-7°. 2-Methoxy-3-phenyl-5-chloropyrazine (8 g.) refluxed 22 hrs. with 3.0 g. Na in 180 cc. dry BuOH and poured into 200 cc. H<sub>2</sub>O and 200 cc. C<sub>6</sub>H<sub>6</sub>, and the organic layer worked up gave 95% 2-methoxy-3-phenyl-5-butoxypyrazine (XIV), mobile yellow oil,

b0.3 137-40°, nD20 1.5608. IX (0.025 mole) and 1.6 g. NaOMe in 50 cc. absolute MeOH heated 40 hrs. at 150-5° in a sealed tube, the mixture washed with MeOH into 300 cc. H2O, the alkaline solution concentrated to 100 cc., acidified with HCl and chilled at 0°, and the crystalline deposit recrystd. from 300 cc. Me2CO yielded 71% 2-hydroxy-3-methoxy-5,6-dimethylpyrazine (XV), long white prisms, m. 234-5°. X gave similarly 71% 5,6-di-Ph analog of XV, m. 266-8° (from Me2CO). XII (3.3 g.) and 20 cc. 20% NaOMe in MeOH heated 24 hrs. at 150° in a sealed tube, the mixture washed with MeOH into 300 cc. H2O, neutralized with CO2, and extracted with CHCl3, and the extract worked up gave 63% 2-hydroxy-5-methoxy-3,6-dimethylpyrazine (XVI), long white needles, m. 180-1° (from 150 cc. Me2CO). XIII (2.4 g.) and 27 cc. 20% MeONa in MeOH processed in the usual manner and the product isolated with PhMe gave 74% 3,6-di-Ph analog of XVI, small yellow prisms, m. 194-6° (from 25 cc. Me2CO). XIV (9.0 g.) and 54 cc. 20% NaOMe in MeOH heated 12 hrs. at 150° in a sealed tube, the mixture washed into 600 cc. 1% aqueous NaOH, the solution washed with Et2O, and neutralized with CO2, the tacky precipitate dissolved in CHCl3, the solution evaporated, the residue dissolved in 15 cc. hot heptane, and the solution kept 4 days at 23° yielded 0.5 g. 2-hydroxy-5-methoxy-6-phenylpyrazine (XVII), m. 205-7° (from EtOAc and heptane), and 2.6 g. 2-hydroxy-3-phenyl-5-butoxypyrazine, very viscous oil, b0.01 135-40°. 2,5-Dimethoxy-3-phenylpyrazine (9.0 g.), 37 cc. 20% NaOMe in MeOH heated 18 hrs. in a sealed tube at 150°, washed into 400 cc. 1% aqueous NaOH, washed with Et2O, and neutralized with CO2, and the precipitate dissolved in 300 cc. warm Me2CO, filtered, and concentrated to 40 cc. gave 2.2 g. 6-Ph analog of XVII, m. 208-9° (from 40 cc. Me2CO). VII (2.0 g.) and 60 cc. 42% HBr refluxed 15 min. and evaporated in vacuo, and the residue recrystd. from 250 cc. H2O yielded 1.3 g. 2,3-dihydroxypyrazine (XVIII), light gray flat prisms, did not melt below 300°; also prepared in 50% yield by acid hydrolysis of 1,2-di(N4-acetylsulfanilyl)pyrazine. XII (1.8 g.) and 25 cc. 20% NaOMe in MeOH heated 40 hrs. in a sealed tube at 175°, poured into 180 cc. warm (60°) H2O, cooled to 25°, filtered, and acidified with 8.0 cc. AcOH, and the precipitate recrystd. by extraction from a Soxhlet thimble with MeOH yielded 1.0 g. 3,6-di-Me derivative of XVIII, small yellow granules, did not melt below 300°; the alkaline solution of the cleavage products from a similar run neutralized with CO2 during several hrs., and the precipitate heated 12 hrs. with POCl3 at 170° gave XI. XIII (1.0 g.) and 20 cc. NaOMe in MeOH heated 60 hrs. in a sealed tube at 182°, poured into 180 cc. H2O, warmed to 80°, cooled to 40°, filtered, and neutralized with CO2, and the precipitate dissolved in 750 cc. hot Me2CO and boiled down rapidly to 50 cc. gave 0.85 g. 3,6-di-Ph derivative (XIX) of XVIII, bronze flakes, m. 295-300° (decomposition). XIX heated 40 hrs. at 180° with POCl3 gave IV. XIII (1.0 g.), 50 cc. AcOH, and 50 cc. 42% HBr refluxed 15 min., concentrated in vacuo, dissolved in warm 1% aqueous NaOH, filtered, and neutralized with CO2 yielded 0.1 g. XIX, m. 295-300° (decomposition) (from Me2CO). III (4.0 g.) and 16 g. CuCN in 60 cc. dry 4-picoline refluxed 7 hrs., poured into 1000 cc. 4N HCl, treated with 500 cc. CHCl3, warmed to 40°, stirred 10 min., and filtered, the CHCl3 phase concentrated, the tarry residue distilled, the pasty distillate (2.5 g.), b0.01 170-220°, refluxed 9 days in 100 cc. EtOH containing 16 g. KOH, the solution diluted with 500 cc. H2O, neutralized with CO2, filtered, and acidified with HCl, and the precipitate recrystd. from AcOH yielded 1.0 g. 2-hydroxy-5-carboxy-3,6-diphenylpyrazine, yellow prisms, m. 264-5° (with evolution of CO2) resolidified and rem. 292-4°. II (2 g.)

refluxed 3 hrs. with 1.5 g. CuCN in 40 cc. dry 4-picoline, the hot solution poured with stirring into 500 cc. cold 3N HCl and 100 cc. CHCl<sub>3</sub>, stirred 15 min., and filtered, the filter residue washed with 100 cc. CHCl<sub>3</sub>, the combined CHCl<sub>3</sub> solns. evaporated, and the residue recrystd. from 25 cc. EtOH gave 1.3 g. 2-hydroxy-3-cyano-5,6-diphenylpyrazine (XX), long yellow prisms, m. 230-2°. XX (1 g.) refluxed 7 hrs. in 50 cc. 15% aqueous KOH, diluted with 200 cc. H<sub>2</sub>O, acidified with HCl, and extracted with CHCl<sub>3</sub>,

and

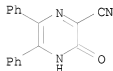
the extract worked up gave 0.7 g. 3-CO<sub>2</sub>H analog of XX, yellow granules, m. 225-7° (with evolution of CO<sub>2</sub> to form 2-hydroxy-5,6-diphenylpyrazine, m. 239-40°).

IT 34121-78-3P, Pyrazinonitrile, 3-hydroxy-5,6-diphenyl-  
34226-38-5P, Pyrazinoic acid, 3-hydroxy-5,6-diphenyl-  
108981-61-9P, Pyrazinol, 3-methoxy-5,6-diphenyl-  
108982-09-8P, Pyrazine, 2-bromo-3-methoxy-5,6-diphenyl-  
132726-33-1P, Pyrazine, 2,3-dimethoxy-5,6-diphenyl-  
RL: PREP (Preparation)

(preparation of)

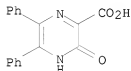
RN 34121-78-3 CAPLUS

CN Pyrazinecarbonitrile, 3-hydroxy-5,6-diphenyl- (8CI) (CA INDEX NAME)



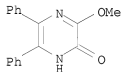
RN 34226-38-5 CAPLUS

CN Pyrazinecarboxylic acid, 3,4-dihydro-3-oxo-5,6-diphenyl- (9CI) (CA INDEX NAME)



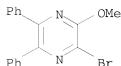
RN 108981-61-9 CAPLUS

CN Pyrazinol, 3-methoxy-5,6-diphenyl- (6CI) (CA INDEX NAME)



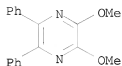
RN 108982-09-8 CAPLUS

CN Pyrazine, 2-bromo-3-methoxy-5,6-diphenyl- (CA INDEX NAME)





RN 132726-33-1 CAPLUS  
CN Pyrazine, 2,3-dimethoxy-5,6-diphenyl- (CA INDEX NAME)



L14 ANSWER 360 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1957:21717 CAPLUS  
DOCUMENT NUMBER: 51:21717  
ORIGINAL REFERENCE NO.: 51:4363h-i, 4364a-g  
TITLE: Reactions of tetrameric hydrocyanic acid  
AUTHOR(S): Brederick, Hellmut; Schmotzer, Gunter  
CORPORATE SOURCE: Tech. Hochschule, Stuttgart, Germany  
SOURCE: Ann. (1956), 600, 95-108  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
OTHER SOURCE(S): CASREACT 51:21717

GI For diagram(s), see printed CA Issue.

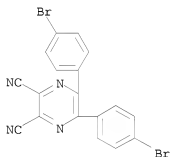
AB cf. preceding abstract. (HCN)<sub>4</sub> (I) (0.85 g.) and 2.5 g. (p-BrCH<sub>4</sub>CO)<sub>2</sub> were refluxed 1 hr. with 10 cc. glacial AcOH in 50 cc. AcOBu giving 1.7 g. 2,3-di(p-bromophenyl)-5,6-dicyanopyrazine (II), m. 208°. Similarly formed from (4-PhOC<sub>6</sub>H<sub>4</sub>CO)<sub>2</sub> was 2,3-di(p-phenoxyphenyl)-5,6-dicyanopyrazine, m. 203-4°. I (3.2 g.) and 4.4 g. isatin in 100 cc. EtOH and 7.5 cc. glacial AcOH refluxed 1 hr. gave 6.5 g. C<sub>6</sub>H<sub>4</sub>.NH.CO.C:NC(CN)<sub>2</sub> CN (III), carmine needles, m. 200° (from MeOH), which crystallized from EtOH giving III.EtOH, orange, losing EtOH at 100° in vacuo over P<sub>2</sub>O<sub>5</sub>. I (1 g.) was shaken to complete solution with 10 cc. absolute HCO<sub>2</sub>H, warmed 5 min. (not above 35°), cooled, and poured into 30 cc. Et<sub>2</sub>O giving 0.63 g. HCONHC(CN):C(CN)NH<sub>2</sub> (IV), m. 182° (from 5 cc. H<sub>2</sub>O). I (2.5 g.) shaken with 10 cc. Ac<sub>2</sub>O gave 2.6 g. N-Ac analog (V) of IV, C<sub>6</sub>H<sub>6</sub>ON<sub>4</sub>, m. 161° (from H<sub>2</sub>O). AcCl and I in dioxane gave the HCl salt of V, m. 140° (from EtOH by addition of Et<sub>2</sub>O), converted into V by neutralization with aqueous NaHCO<sub>3</sub>. I (5 g.) 120 cc. dry dioxane, and 60 cc. Ac<sub>2</sub>O refluxed 6 hrs., concentrated in vacuo to

15-20

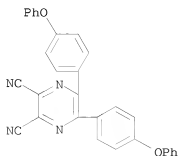
cc., and kept at 0° gave 4.1 g. "triacetate" (cf. preceding abstract), 1-acetyl-2-acetoxy-2-methyl-4,5-dicyano-1,2-dihydroimidazole (VI), m. 191°. When a tech. grade of dioxane was used in this reaction and the mother liquors from VI (15 cc.) were diluted with 15 cc. H<sub>2</sub>O, about 0.055 g. "diacetate B" (VII), C<sub>8</sub>H<sub>8</sub>O<sub>2</sub>N<sub>4</sub>; m. 174-6° (from anisole) was isolated. Due to the small amount the structure of VII was not proved, but the IR spectrum (given in the preceding article) indicates that it contains a heterocyclic ring. V (1 g.) refluxed 6 hrs. with 10 cc. Ac<sub>2</sub>O and 25 cc. dioxane gave 0.44 g. V. VI (1 g.) heated 20 min. with 10 cc. 0.1N NaOH and 15 cc. H<sub>2</sub>O gave 0.72 g. (AcNHC(CN):)<sub>2</sub>, "diacetate A," m. 222°, also formed in 31% yield by heating 2 g. I 3 hrs. with 25 cc. Ac<sub>2</sub>O and 40 cc. dioxane, adding 20 cc. glacial AcOH, refluxing 1/2 hr., evaporating to 10 cc., and keeping 48 hrs. at 0°. I (1 g.) condensed with 1.7 g. ClCO<sub>2</sub>Ph in 30 cc. boiling anisole gave 1.2 g. PhO<sub>2</sub>CNHC(CN):C(CN)NH<sub>2</sub>, m. 177° (from 50% EtOH). To 3 g. (COCl)<sub>2</sub> in dioxane were added dropwise 1.2 g. I in 15 cc. dioxane, cooled, and stirred, giving 0.7 g. 2,3-dioxo-5,6-dicyano-1,2,3,4-tetrahydropyrazine, decomposing about 270° (from little H<sub>2</sub>O). I (5.5 g.) in 100 cc. absolute EtOH was refluxed 25 min. with 6.3 g. MeC(OEt).NH<sub>3</sub>Cl, cooled, filtered from NH<sub>4</sub>Cl, concentrated and extracted with dry Et<sub>2</sub>O giving 7.5 g. (crude)

MeC(OEt):NC(CN):C(NH2)CN (VIII), m. 90° (from anisole, by addition of petr. ether at 0°), which hydrolyzed with H2O gave I, m. 183° (the only m.p. of I given in this series). VIII (2 g.) refluxed 9 hrs. in 40 cc. anisole, filtered hot and cooled to 0° gave 0.75 g. 2-methyl-4,5-dicyanoimidazole, m. 228° (from H2O after treatment with C). 4,5-Dicyanoimidazole (2.4 g.) in 20 cc. dry dioxane and 1.5 cc. EtOH with dry HCl gave 3.7 g. crude N:CH.NH.C(CN):C.C(OEt):NH.HCl (IX), m. 160-70°, purified by solution in cold HCO2H and addition of EtOH. IX (2 g.) refluxed with 25 cc. H2O and active C gave 1 g. N:CH.NH.C(CN):CCO2Et, m. 185°. NH.N:N.C(CN):CR (IXa) R = CN (1.19 g.) in 10 cc. dry dioxane and 1 g. absolute EtOH, cooled, with 0.8 g. HCl gas gave (after 2 months) at 0°, 1.4 g. of the HCl salt of IXa [R = C:NH(OEt).HCl], decompose about 210°, 1.25 g. of which boiled with 5 cc. H2O gave 0.6 g. IXa (R = CO2Et), m. 112-14° (from Et2O followed by CHCl3 containing CCl4). 4,5-R(CN)2 (R = 4-imidazolin-2-one radical) (10 g.) in 150 cc. dioxane and 7 cc. EtOH, cooled, with HCl gas gave 15.5 g. 4,5-NCRC(:NH)OEt.HCl, decompose about 300° (from HCO2H-Et2O), which when hydrolyzed gave 81% 4,5-NCRCO2Et, m. 205° (from H2O). 5,6-R'(CN)2 (R' = 2,3-dimethylpyrazine radical) similarly gave 85% 5,6-NCR'C-(NH)OEt.HCl, m. 225-7° (from HCO2H-Et2O), which on hydrolysis gave 77% 5,6-NCR'CO2Et, m. 99°.

IT 101579-12-8P, 2,3-Pyrazinedicarbonitrile, 5,6-bis(p-bromophenyl)-  
 103165-51-1P, 2,3-Pyrazinedicarbonitrile, 5,6-bis(p-phenoxyphenyl)-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 101579-12-8 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



RN 103165-51-1 CAPLUS  
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(p-phenoxyphenyl)- (6CI) (CA INDEX NAME)



ACCESSION NUMBER: 1957:12715 CAPLUS

DOCUMENT NUMBER: 51:12715

ORIGINAL REFERENCE NO.: 51:2672h-i, 2673a-i, 2674a-b

TITLE: The browning reaction of sugars and amino acids

approached by means of simple hydroxy ketones

AUTHOR(S): Hurd, Charles D.; Buess, Charles M.

CORPORATE SOURCE: Northwestern Univ., Evanston, IL

SOURCE: Journal of the American Chemical Society (1956), 78, 5667-71

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB PhCH(OH)Bz (1.1 g.) and 3 cc. PhCH<sub>2</sub>NH<sub>2</sub> heated 0.5 hr. at 165-70°, cooled, diluted with an equal volume of absolute EtOH, and allowed to stand 2 days yielded 0.6 g. (PhCH<sub>2</sub>N:CHPh)<sub>2</sub> (I), colorless crystals, m. 95-6° (from absolute EtOH). I (455 mg.) heated with 2 cc. concentrated HCl on the steam

bath and cooled gave 170 mg. Bz<sub>2</sub>, m. 93-4°. PhCH(OH)Bz (4.2 g.) and 2.1 g. PhCH<sub>2</sub>NH<sub>2</sub> fused over a free flame, heated 15 min. at 100° dissolved in 10 cc. absolute EtOH, and cooled yielded 1.35 g. BzPhCHNHCH<sub>2</sub>Ph (II), colorless prisms, m. 74-5° (from EtOH); II turned yellow on standing. PhCH(OH)Bz (4.2 g.) heated 0.5 hr. with 7 cc. PhCH<sub>2</sub>NH<sub>2</sub> at 150° and the product treated with HCl yielded II.HCl, m. 218-21°. II (1 g.) and 3 cc. PhCH<sub>2</sub>NH<sub>2</sub> refluxed 0.5 hr. under N at 150°, cooled, washed with H<sub>2</sub>O, dissolved in hot 95% EtOH, and cooled yielded 2.3 g. I, colorless crystals, m. 96-7° (from absolute EtOH). The product from a similar run diluted with H<sub>2</sub>O, acidified, and distilled, and the distillate (25 cc.) added to 2 g. 2,4-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>NHNH<sub>2</sub>, 1 cc. concentrated HCl, and 100 cc. EtOH yielded 2.4 g. 2,4-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>NHN:CHPh (III); a similar run but without acidification gave 0.25 g. III. PhCH(OH)Bz (4.2 g.) and 5 cc. AmNH<sub>2</sub> heated 15 min. on the steam bath, dissolved in 20 cc. C<sub>6</sub>H<sub>6</sub>, and washed with 40 cc. 5% HCl yielded 5.4 g. BzPhCHNHAm.HCl, m. about 200°. PhCH(OH)Bz and H<sub>2</sub>N(CH<sub>2</sub>)<sub>2</sub>OH (4 g. each) heated 1 hr. under N at 100°, dissolved in 25 cc. 95% EtOH, treated dropwise with cooling with 14 cc. concentrated HCl, and diluted gave

0.42 g. Bz<sub>2</sub>, m. 93-4°, PhCH(OH)Bz (4.2 g.) and 1.5 g. H<sub>2</sub>NCH<sub>2</sub>CO<sub>2</sub>H heated gradually during 45 min. to 160-5°, cooled to 80°, and diluted with absolute EtOH gave 0.12 g. tetraphenylpyrazine (IV), m. 248-9°. PhCH(OH)Bz (8.5 g.) and 3.6 g. DL-alanine heated 1 hr. at 170-5° (or at 150°) and passing the volatile products with N into 0.25 g. 2,4-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>NHNH<sub>2</sub>, 0.4 cc. concentrated HCl, and 25 cc. 95% EtOH gave 0.2 g. 2,4-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>NHN:CHMe, m. 161-2° (from EtOH-EtOAc); the sirupy residue dissolved in 15 cc. warm glacial AcOH and allowed to stand several hrs., and the precipitate (4.2 g.) recrystd. from glacial AcOH yielded 1.26 g. 2,3,4,5-tetraphenylpyrrole, m. 215-16°, and 0.66 g. IV, m. 253-4°. PhCH-(OH)Bz (2.1 g.) and 1.3 g. DL-leucine heated 3 hrs. at 165-70° and diluted with 5 cc. glacial AcOH yielded 0.03 g. IV, m. 249-50°. PhCH(OH)Bz, H<sub>2</sub>NCH<sub>2</sub>CO<sub>2</sub>H, and PhAc (0.01 mole each) heated 0.5 hr. at 175° and diluted with 10 cc. absolute EtOH gave 0.54 g. 1-methyl-2,3,5-triphenylpyrrole (V), m. 177-8° (from glacial AcOH and EtOH). Me<sub>3</sub>CONa (from 0.40 g. Na) in 40 cc. Me<sub>3</sub>COH treated with 0.29 g. 2,3,5-triphenylpyrrole, the mixture refluxed 15 min. with 1 cc. Me<sub>2</sub>SO<sub>4</sub>, poured into H<sub>2</sub>O, and filtered, and the residue washed with MeOH yielded 0.16 g. V, colorless needles, m. 176-7° (from absolute EtOH). MeCH(OH)Ac (2.5 g.) and 4.0 g. DL-alanine refluxed 1 hr. under N, cooled, and triturated with Et<sub>2</sub>O, and the extract worked up gave 0.82 g. distillate, b<sub>5</sub> 55-90°, which treated with picric acid in Et<sub>2</sub>O gave the picrate of 2,3,5,6-tetramethylpyrazine, m. 192-3°. EtCH(OH)COEt (4.0 g.), b<sub>40</sub> 76-8°, and 3.0 g. DL-alanine heated 1 hr. under N at

160° with occasional release of the H<sub>2</sub>O vapor, filtered from 1.75 g. unchanged alanine, and diluted with 20 cc. pentane gave 0.25 g. N-(1-propionylpropyl)alanine, clusters of platelets, m. 165-6° (from 95% EtOH); the oily residue from the mother liquor dissolved in 5 cc. di-Bu phthalate and distilled yielded 1.5 g. unidentified oil, b<sub>p</sub> 150-70°, which had a green-blue fluorescence and gave an oily, Et<sub>2</sub>O-insol. picrate. Acetol (VI) (25 g.) and 30 g. powdered DL-alanine heated 1 hr. under N at 120° and distilled gave about 5 cc. aqueous fraction containing some 2,5-dimethylpyrazine; the aqueous distillate treated

with

HgCl<sub>2</sub> in dilute aqueous AcOH gave crystals decomposing without melting at 210°; the aqueous material gave a picrate, m. 156-7°; the brown distillation residue dissolved in 200 cc. H<sub>2</sub>O, filtered, mixed with 200 cc. glacial AcOH, treated with 50 g. HgCl<sub>2</sub> in 1500 cc. H<sub>2</sub>O, allowed to stand 3-4 days, and filtered, the filter residue (21 g.) suspended in H<sub>2</sub>O, treated with H<sub>2</sub>S, and filtered, and the filtrate evaporated gave 2.2 g. condensation product (VII), brown solid. VI (0.4 g.) and 0.5 g. 2,5-dimethylpyrazine heated 0.5 hr. under N at 120° resulted only in a light yellow color; a similar run under air gave a slightly deeper yellow color; the same color was obtained in the presence of 0.1 g. AcOH or by heating pure dimethylpyrazine. VI (0.4 g.) and 0.5 g. 2,4-dimethylpyrrole heated 0.5 hr. under N at 100°, cooled, triturated with H<sub>2</sub>O, mixed with 25 cc. H<sub>2</sub>O, and distilled to remove the unchanged dimethylpyrrole, and the residual mixture dried gave 0.67 g. condensation product (VIII); VIII was entirely soluble in Et<sub>2</sub>O or concentrated

HCl,

but became insol. after keeping 1 week at 1 mm. over P<sub>2</sub>O<sub>5</sub>. H<sub>2</sub>NCH<sub>2</sub>CO<sub>2</sub>H (4.6 g.) and 7.4 g. VI refluxed 20 min. under N, cooled, washed with Et<sub>2</sub>O, and dissolved in 25 cc. H<sub>2</sub>O, the solution filtered, treated with 50 cc. glacial AcOH and 15 g. HgCl<sub>2</sub> in 400 cc. H<sub>2</sub>O, allowed to stand 6 days, and filtered, and the filter residue (12 g.) suspended in H<sub>2</sub>O, treated with excess H<sub>2</sub>S, filtered, and evaporated gave 1.3 g. amorphous brown solid; it changed in AcOH to yellow when reduced with Zn; a 0.3-g. portion added to 2 g. fused KOH gave a distillate which caused an HCl-acidified pine splinter to turn red and gave a precipitate, m. 130°, with HgCl<sub>2</sub>; this indicates 2-methylfuran. VI (5 g.) and 4.5 g. DL-β-phenylalanine heated 1 hr. under CO<sub>2</sub> at 120°, the volatiles distilled, the brown residue washed with Et<sub>2</sub>O and H<sub>2</sub>O and dissolved in 40 cc. AcOH, and the solution diluted with 120 cc. H<sub>2</sub>O gave 3.1 g. brown precipitate; a 0.453-g.

sample

oxidized with KMnO<sub>4</sub> gave 0.131 g. BzOH; β-phenylalanine (0.434 g.) yielded similarly 0.246 g. BzOH. BzCH<sub>2</sub>OH (1.36 g.), m. 82-3°, and 0.89 g. DL-alanine heated 15 min. at 120-40° caused strong browning and CO<sub>2</sub> evolution; a part of the brown mass dissolved in 10 cc. boiling absolute EtOH left 0.37 g. 2,5-diphenylpyrazine, needles, m. 195-201°. The ultraviolet absorption spectra of VII and VIII are recorded.

IT

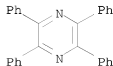
642-04-6P, Pyrazine, tetraphenyl-  
RL: PREP (Preparation)  
(preparation of)

RN

642-04-6 CAPLUS

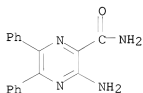
CN

Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1957:9378 CAPLUS  
 DOCUMENT NUMBER: 51:9378  
 ORIGINAL REFERENCE NO.: 51:1971b-e  
 TITLE: A new synthetic approach to pteridines  
 AUTHOR(S): Osdene, T. S.; Taylor, E. C.  
 CORPORATE SOURCE: Princeton Univ., Princeton, NJ  
 SOURCE: Journal of the American Chemical Society (1956), 78, 5451-2  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB cf. C.A. 50, 13047b. A general method is described for the synthesis of pyrazine intermediates which permits the ready synthesis of 1-substituted pteridines. PhN<sub>2</sub>CH(CN)CO<sub>2</sub>Et with N<sub>2</sub>H<sub>4</sub> or N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O in EtOH yielded 3-hydroxy-4-phenylazo-5-aminopyrazole (I), m. 256° (decomposition). I with H in 98% HCO<sub>2</sub>H containing 10% Pd-C yielded 3-hydroxy-4,5-diformylaminopyrazole (II), m. 212-13° (decomposition). II with 50% H<sub>2</sub>SO<sub>4</sub> yielded 3-hydroxy-4,5-diaminopyrazole sulfate (III). Cyclization of the N<sub>2</sub>H<sub>4</sub> salt of nitrosocyanooacetohydrazide with 40% NaOH at room temperature yielded 3-hydroxy-4-nitroso-5-aminopyrazole (IV); catalytic reduction of IV yielded III. The same reactions with MeNHNH<sub>2</sub> yielded 1-methyl-3-hydroxy-4,5-diaminopyrazole, m. above 250°. III with glyoxal, Ac<sub>2</sub>, and Bz<sub>2</sub> yielded 3-hydroxy-1-pyrazolo[b]pyrazine (V), m. 314-15° (decomposition); 3-hydroxy-5,6-dimethyl-1-pyrazolo[b]pyrazine (VI), m. 325° (decomposition); 3-hydroxy-5,6-diphenyl-1-pyrazolo[b]pyrazine (VII), m. 269° (decomposition); 1-methyl-3-hydroxy-5,6-dimethyl-1-pyrazolo[b]pyrazine (VIII), m. 267-8°; 1-methyl-3-hydroxy-1-pyrazolo[b]pyrazine (IX), m. 242-3°. The preceding compds. treated with Raney Ni yielded 2-amino-3-carboxamides. VII treated with Raney Ni 3 hrs. in boiling EtOH yielded 80% 2-amino-5,6-diphenylpyrazine-3-carboxamide, m. 203-5°. Similarly, IX yielded 2-methylaminopyrazine-3-carboxamide, m. 200-1°. Direct condensation of IV with Ac<sub>2</sub> in EtOH containing Raney Ni yielded 2-amino-5,6-dimethylpyrazine-3-carboxamide.  
 IT 101445-25-4P, Pyrazinamide, 3-amino-5,6-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 101445-25-4 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 363 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1956:89020 CAPLUS  
 DOCUMENT NUMBER: 50:89020  
 ORIGINAL REFERENCE NO.: 50:16686b-i  
 TITLE: Reduction of aryl halides by lithium dialkylamines  
 AUTHOR(S): Benkeser, Robert A.; DeBoer, Charles E.  
 CORPORATE SOURCE: Purdue Univ., Lafayette, IN  
 SOURCE: Journal of Organic Chemistry (1956), 21, 281-4  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

## OTHER SOURCE(S):

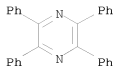
CASREACT 50:89020

AB cf. following abstract The reaction of Li dialkylamines with o-BrC<sub>6</sub>H<sub>4</sub>OMe (I) has been investigated. Dropwise addition of 18.7 g. I in 30 cc. Et<sub>2</sub>O to 1.14 g. LiAlH<sub>4</sub> in 50 cc. Et<sub>2</sub>O and refluxing the mixture 10 h. give 5% PhOMe and 95% unchanged I. Refluxing 28.5 g. I with Me<sub>2</sub>NLi (prepared by the action of Me<sub>2</sub>NH on 0.15 mol BuLi in Et<sub>2</sub>O and distillation of the solvent in vacuo) in 100 cc. Et<sub>2</sub>O with stirring and hydrolyzing the mixture with H<sub>2</sub>O give 16% PhOMe, 26% I, 34% N,N-dimethyl-m-anisidine (II), and 1.7 g. higher-boiling material which, with C<sub>6</sub>H<sub>3</sub>(NO<sub>2</sub>)<sub>3</sub> (III), gives the III derivative of N,N,N',N'-tetramethyl-m-phenylenediamine. Refluxing 93.5 g. I and Me<sub>2</sub>NLi (from 0.6 mol BuLi) 15.5 h. in 500 cc. Me<sub>2</sub>NH, distilling the Me<sub>2</sub>NH in vacuo, and hydrolyzing the residue with 500 cc. H<sub>2</sub>O give 13% PhOMe, 31% I, 35% II, and 2.7 g. higher-boiling material. Treating Me<sub>2</sub>NLi (from 0.2 mol BuLi) with 100 g. I 20 h. with stirring and hydrolyzing the mixture with H<sub>2</sub>O give 8% PhOMe, 70 g. I, 47% II, and 1.4 g. higher-boiling material. Refluxing 93.5 g. I with Ph<sub>2</sub>NLi (from 0.55 mol BuLi) in 300 cc. Et<sub>2</sub>O with stirring gives 91% I and 89% Ph<sub>2</sub>NH. Similarly, 46.75 g. I and PhNMeLi (from 0.25 mol BuLi) give 92% I and 86% PhNHMe. Adding 69.2 g. I to PhN(CH<sub>2</sub>Ph)Li (from 0.45 mol BuLi) in 400 cc. Et<sub>2</sub>O, refluxing the mixture 21 h., and hydrolyzing it with 250 cc. HCl (1:3) give 20% PhOMe, 72% I, and 70% PhNHCH<sub>2</sub>Ph. I (46.75 g.) and PhCH<sub>2</sub>NMeLi (from 0.25 mol BuLi) refluxing in 50 cc. Et<sub>2</sub>O 19 h. with stirring and the mixture hydrolyzed with H<sub>2</sub>O give 13% PhOMe, 48% PhCH<sub>2</sub>NHMe, 56% I, and 26% N-benzyl-N-methyl-m-anisidine, b<sub>2.5</sub> 151-5°, n<sub>D20</sub> 1.5977. From the distillation residue a small amount of 2,5-diphenylpyrazine (IV) is obtained on vacuum sublimation. Refluxing 75 g. I with a suspension of (PhCH<sub>2</sub>)<sub>2</sub>NLi (from 0.4 mol BuLi) in 100 cc. Et<sub>2</sub>O 20 h. and hydrolyzing the mixture with H<sub>2</sub>O give 36% PhOMe, 46% I, 62% (PhCH<sub>2</sub>)<sub>2</sub>NH, and 8% N,N-dibenzyl-m-anisidine (V), b<sub>1</sub> 190-215°, m. 56° (picrate m. 169.5-70°), and, from the distillation residue, 28% 2,3,5,6-tetraphenylpyrazine (VI). Refluxing 15.5 g. m-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>OMe, 32.8 g. PhCH<sub>2</sub>Cl, and 10.5 g. K<sub>2</sub>CO<sub>3</sub> overnight in 100 cc. H<sub>2</sub>O gives 6.8 g. V, m. 56°. (p-MeO-C<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>)<sub>2</sub>NH (VII), b<sub>3</sub> 192°, m. 32-3°, is prepared in 53% yield from 65 g. p-MeOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NH<sub>2</sub> and 65 g. p-MeO-C<sub>6</sub>H<sub>4</sub>CHO according to the method of Phillips (C.A. 42, 2239e). Refluxing 37.4 g. I 20 h. with (p-MeOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>)<sub>2</sub>NLi (from 0.2 mol BuLi) in 100 cc. Et<sub>2</sub>O and hydrolyzing the mixture with H<sub>2</sub>O give 12% PhOMe, 63% I, 75% VII, 11% N,N-bis(p-methoxybenzyl)-m-anisidine, b<sub>1</sub> 235-45°, m. 65-6°, and, from the distillation residue, 6% 2,3,5,6-tetra(p-methoxyphenyl)pyrazine, m. 267.5-9°. Refluxing 93.5 g. I 19 h. with Li piperide (from 0.45 mol BuLi) in 350 cc. Et<sub>2</sub>O and hydrolyzing the mixture with 250 cc. HCl (1:3) give 15% PhOMe, 33% I, 9% piperidine, and 21% 1-(m-methoxyphenyl)piperidine, b<sub>3</sub> 116°, n<sub>D20</sub> 1.5611 (picrate m. 157-8°). Refluxing 11.9 g. N-benzylidenemethylamine, b<sub>3</sub> 41-2°, n<sub>D20</sub> 1.5526, with a suspension of PhCH<sub>2</sub>NMeLi (from 0.1 mol BuLi) 20 h. with stirring and hydrolyzing the mixture with H<sub>2</sub>O give 91% PhCH<sub>2</sub>NHMe and, from the distillation residue, some IV. Refluxing 19.5 g. N-benzylidenemethylamine, b<sub>2.5</sub> 135-6°, n<sub>D17.5</sub> 1.6012, with (PhCH<sub>2</sub>)<sub>2</sub>NLi in 150 cc. Et<sub>2</sub>O gives 78% (PhCH<sub>2</sub>)<sub>2</sub>NH.HCl and 20% VI. A possible reaction mechanism, consistent with the results, is suggested.

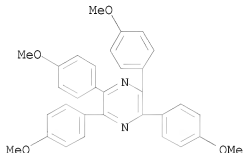
IT 642-04-6P, Pyrazine, tetraphenyl- 21885-49-4P, Pyrazine, tetrakis(p-methoxyphenyl)-  
RL: PREP (Preparation)  
(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 21885-49-4 CAPLUS  
CN Pyrazine, tetrakis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



L14 ANSWER 364 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1956:74065 CAPLUS  
DOCUMENT NUMBER: 50:74065  
ORIGINAL REFERENCE NO.: 50:13941g-i,13942a-i,13943a-c  
TITLE: 2-Bromopyrazines, 2-cyanopyrazines, and their derivatives  
AUTHOR(S): Karmas, George; Spoerri, Paul E.  
CORPORATE SOURCE: Polytech. Inst. of Brooklyn, Brooklyn, NY  
SOURCE: Journal of the American Chemical Society (1956), 78, 2141-4  
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB DL-Phenylglycine anhydride (41.5 g.) and 120 cc. PBr<sub>3</sub> refluxed 5 hrs., cooled to 25°, and filtered through a sintered glass funnel, the residue washed with 20 cc. PBr<sub>3</sub>, the filtrate poured cautiously onto 2 kg. crushed ice, made strongly basic with 50% aqueous NaOH, and extracted at 35-40° with two 400-cc. portions CHCl<sub>3</sub>, the aqueous layer acidified and filtered to give 6.0 g. product, the CHCl<sub>3</sub> extract evaporated, the residual crude 2-bromo-3,6-diphenylpyrazine added to 10.0 g. Na in 350 cc. MeOH, the mixture refluxed 4 hrs., concentrated to 200 cc., and poured into 2 l. H<sub>2</sub>O, the brown solid precipitate filtered off, dried in air, refluxed 10 hrs. with 300 cc. 48% HBr and 100 cc. AcOH, and poured into 2 l. H<sub>2</sub>O, and the precipitate washed with 5% aqueous NaHCO<sub>3</sub> and H<sub>2</sub>O, dried in air, combined with the product isolated earlier, dissolved in 350 cc. hot pyridine, filtered hot with Super Cel, and cooled slowly to 0° gave 21.3 g. 2-hydroxy-3,6-diphenylpyrazine (I), small yellow granules, m. 292-3°. I (10.0 g.) in 1 l. warm (65°) 1% aqueous NaOH treated with stirring with a solution of PhN<sub>2</sub>Cl from 6.0 g. PhNH<sub>2</sub>, and 12 cc. 12N HCl in 70 cc. H<sub>2</sub>O and 4.6 g. NaNO<sub>2</sub> in 10 cc. H<sub>2</sub>O, the resulting gel kept 0.5 hr. at 0°, 1 hr. at 20°, treated with stirring with 40 cc. 12N HCl, and filtered, and the residue dried in air gave 10.5 g. 2-hydroxy-3,5,6-triphenylpyrazine, small yellow prisms, m. 279-81° (from AcOH). PBr<sub>3</sub> (12.0 cc.), 6.2 cc. Br, and 5.7 g. P<sub>2</sub>O<sub>5</sub> refluxed in 30

cc. POC13, more of the PBr3, Br, and P2O5 added in the same quantities to the solution, the mixture refluxed again until the P2O5 had dissolved, this addition of the reactants continued until the final mixture totalled about 1200 g., and the mixture distilled yielded 70-80% POBr3, b. 185-93°. The appropriate hydroxypyrazine (II) (0.20 mole) added with stirring to 20 cc. PBr3 in 40 cc. POBr3, the mixture heated with slow stirring for a certain time, the paste reaction mixture cooled to 25° and cautiously poured onto 750 g. ice layered with 200 cc. Et2O, the hydrolysis mixture made alkaline with 28% NH4OH and filtered with 10 g. Super-Cel, the aqueous phase of the filtrate extracted with 100 cc. Et2O, and the combined Et2O solns. worked up gave the corresponding 2-bromopyrazine (III); method A. The II (0.20 mole) added with slow stirring to 45 cc. POBr3 at 50°, the mixture heated with stirring, cooled, and hydrolyzed cautiously, and the product isolated in the usual manner gave the III; method B. The II (0.10 mole) and 35 cc. PBr3 refluxed for a certain time, cooled, poured onto 500 g. ice, and extracted with CHCl3, the extract washed with 100 cc. 2% aqueous NaOH, dried, and evaporated to dryness, and the residue recrystd. from EtOH yielded the III; method C. The following substituted III were prepared by one of the methods (3-, 5-, and 6-substituents, reaction time, reaction temperature, method, % yield, b.p./mm. or m.p., and nD25 given): H, H, H (IV), 10 min., 50°, A, 58, 57-8°/9, 1.5814; Me, H, H, 1 hr., 120°, B, 61, 105-7°/50, 1.5667; Et, H, H, 1 hr., 125°, B, 22, 85-7°/14, 1.5553; Pr, H, H, 0.5 hr., 125°, A, 38, 101-2°/14, 1.5456; Ph, H, H, 4 hrs., reflux, C, 42, 110-15°/0.5, - (m. 90-5°); Me, Me, H, 10 min., 145°, B, 53, 91-2°/14, 1.5594; Me, Me, Me, 15 min., reflux, C, 41, 105-10°/20, - (m. 53-4°); H, Me, Me, 20 min., reflux, C, 14, 94-6°/14, 1.5606; H, Ph, Ph, 20 min., reflux, C, 63, 149-50°, -; Me, Ph, Ph, 0.5 hr., reflux, C, 48, 155-6°, -; Et, Ph, Ph, 1 hr., reflux, C, 48, 99-100°, -; Pr, Ph, Ph, 3 hrs., reflux, C, 82, 135-40°/0.001, -; iso-Pr, Ph, Ph, 3 hrs., reflux, C, 62, 118-19°, -; Ph, H, Ph, 16 hrs., reflux, C, 52, 119-20°, -; Ph, Ph, Ph, 30 hrs., reflux, C, 50, 178-80°, -. IV (14.0 g.) and 14.0 g. CuCN in 40 cc. dry pyridine refluxed 3 hrs., poured with stirring into 300 cc. ice cold 6N HCl layered with 150 cc. Et2O, the mixture stirred 10 min., diluted with 1 l. cold H2O, and filtered, the residual brown solid washed with 150 cc. Et2O, the aqueous portion of the filtrate further extracted with three 100-cc. portions Et2O, and the combined, dried Et2O solns. worked up gave 2.7 g. 2-cyanopyrazine, b100 116-17°, nD20 1.5342. The appropriate III and 15 g. CuCN in 40 cc. dry 4-picoline refluxed 3 hrs. and poured hot with stirring into 400 cc. ice cold 4N HCl and 100 cc. CHCl3, the mixture stirred 0.5 hr. and filtered, the aqueous portion of the filtrate extracted with 100 cc. CHCl3, and the combined, dried CHCl3 solns. worked up gave the corresponding substituted 2-cyanopyrazines (3-, 5-, and 6-substituents, % yield, b.p./mm. or m.p., and nD20 given): Me, H, H, 78, 125-6°/50, 1.5278; Et, H, H, 82, 102-3°/15, 1.5206; Pr, H, H, 82, 112-13°/15, 1.5136; Me, Me, H, 75, 113-15°/20, 1.5273; H, Me, Me, 80, 119-20°/17, - (m. 29-30°); Me, Me, Me (V), 90, 120-1°/17, - (m. 68-9°); Ph, H, H, 90, 117-18°/0.2, - (m. 77-8°); H, Ph, Ph (VI), 96, 153-4° (from heptane), -; Me, Ph, Ph, 97, 173-4° (from heptane), -; Ph, Ph, Ph, 97 (10 hrs. reflux), 225-6° (from PhMe), -. The appropriate 2-cyanopyrazine (0.05 mole) in 25 cc. concentrated H2SO4 heated 3 hrs. at 120-5° and poured onto 400 g. ice, the solution basified with 50% aqueous NaOH and extracted with CHCl3, and the extract worked up gave the corresponding substituted 2-carboxamidopyrazines (substituents, % yield, and m.p. given): 3-Me, 17, 164-5° (from Me2CO); 3-Et, 35, 119-20° (from Me2CO); 3-Pr, 60, 98-9° (from Et2O); 3-Ph, 70, 171-2° (from CHCl3); 3,5,6-tri-Me, 44, 165-6° (from Me2CO). VI (4.3 g.) in 200 cc. dry C6H6 stirred at 25° with 7.0 cc. 4.0M MeMgBr in Et2O, refluxed 1 hr., cooled to 10°, treated with 50 cc.

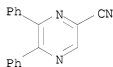


6N HCl, refluxed 1 hr. with stirring, and diluted with 200 cc. C6H6, the C6H6 solution evaporated, and the solid residue recrystd. from 20 cc. Me2CO gave

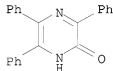
3.5 g. 2-acetyl-5,6-diphenylpyrazine, small golden flakes, m. 152-3°. V (5.0 g.) gave similarly with 13.0 cc. 4.0M MeMgBr 2.5 g. 2-acetyl-3,5,6-trimethylpyrazine, soft white flakes, b14 113-14°, m. 61-2°. V (2.0 g.) in 5 cc. absolute EtOH and 15 cc. dioxane saturated at 0° with HCl, kept 3 days at 25°, and filtered, the residue washed with Et2O and added with stirring to 100 cc. alc. NH4OH (saturated) at 0°, the mixture kept 3 days at 25° and filtered, the filtrate evaporated to dryness in vacuo, the solid residue dissolved in 10 cc. warm absolute EtOH, the solution diluted with 20 cc. Me2CO and filtered after

10 min., and the filtrate concentrated to 6 cc., diluted with 25 cc. Me2CO, and kept at 0° gave 2.0 g. 2-amidino-3,5,6-trimethylpyrazine HCl salt, hard, cream-colored granules, m. 170-1°. VI (2.0 g.) and 2.4 g. dry NH4SCN stirred 45 min. at 180°, cooled, leached with 100 cc. boiling H2O, and decanted from the tar, the tar leached with two 80-cc. portions boiling 1% HCl, the combined acid exts. basified with aqueous NaOH, chilled, and filtered, and the residue boiled with 70 cc. 1% HCl, filtered, and cooled deposited 50 mg. 2-amidino-5,6-diphenylpyrazine HCl salt, m. 260-5° (decomposition).

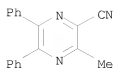
IT 81225-12-9P, Pyrazinonitrile, 5,6-diphenyl- 104369-41-7P  
 , Pyrazinol, triphenyl- 124629-61-4P, Pyrazinonitrile,  
 3-methyl-5,6-diphenyl- 243472-73-3P, Pyrazine,  
 2-bromo-3,5,6-triphenyl- 367519-16-2P, Ketone,  
 5,6-diphenylpyrazinyl methyl 500350-55-0P, Pyrazine,  
 2-bromo-3-methyl-5,6-diphenyl- 820250-42-8P, Pyrazinonitrile,  
 triphenyl- 857179-59-0P, Pyrazinamide, 5,6-diphenyl-  
 hydrochloride 857181-81-8P, Pyrazine, 2-bromo-3-isopropyl-5,6-  
 diphenyl- 857181-89-6P, Pyrazine, 2-bromo-3-ethyl-5,6-diphenyl-  
 857181-94-3P, Pyrazine, 2-bromo-5,6-diphenyl-3-propyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 81225-12-9 CAPLUS  
 CN Pyrazinecarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 104369-41-7 CAPLUS  
 CN 2(1H)-Pyrazinone, 3,5,6-triphenyl- (CA INDEX NAME)

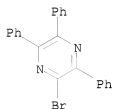


RN 124629-61-4 CAPLUS  
 CN Pyrazinecarbonitrile, 3-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



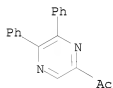
RN 243472-73-3 CAPLUS

CN Pyrazine, bromotriphenyl- (9CI) (CA INDEX NAME)



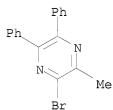
RN 367519-16-2 CAPLUS

CN Ethanone, 1-(5,6-diphenylpyrazinyl)- (9CI) (CA INDEX NAME)



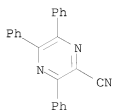
RN 500350-55-0 CAPLUS

CN Pyrazine, 2-bromo-3-methyl-5,6-diphenyl- (CA INDEX NAME)



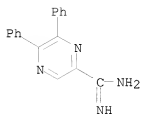
RN 820250-42-8 CAPLUS

CN Pyrazinecarbonitrile, triphenyl- (9CI) (CA INDEX NAME)



RN 857179-59-0 CAPLUS

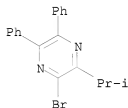
CN Pyrazinamidine, 5,6-diphenyl-, hydrochloride (5CI) (CA INDEX NAME)



● HCl

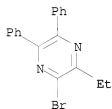
RN 857181-81-8 CAPLUS

CN Pyrazine, 2-bromo-3-isopropyl-5,6-diphenyl- (5CI) (CA INDEX NAME)



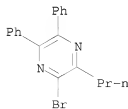
RN 857181-89-6 CAPLUS

CN Pyrazine, 2-bromo-3-ethyl-5,6-diphenyl- (CA INDEX NAME)



RN 857181-94-3 CAPLUS

CN Pyrazine, 2-bromo-5,6-diphenyl-3-propyl- (CA INDEX NAME)



ACCESSION NUMBER: 1956:69468 CAPLUS  
DOCUMENT NUMBER: 50:69468  
ORIGINAL REFERENCE NO.: 50:13047b-i,13048a-b  
TITLE: Pteridines. XIV. Further studies on a new approach to pteridine synthesis  
AUTHOR(S): Taylor, E. C., Jr.; Garland, Robert B.; Howell, Charles F.  
CORPORATE SOURCE: Univ. of Illinois, Urbana  
SOURCE: Journal of the American Chemical Society (1956), '78, 210-13  
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
OTHER SOURCE(S): CASREACT 50:69468

AB cf. C.A. 50, 2608h. 3-Amino-5,6-diphenylpyrazinamide (I) (1.509 g.) and 10 cc. BzCl refluxed 4 h., cooled, and diluted with 250 cc. petr. ether gave 1.179 g. 2,6,7-triphenyl-4(3H)-pteridinone (II), white needles, m. 290° (from CH<sub>2</sub>Cl<sub>2</sub>-petr. ether and then aqueous HCONMe<sub>2</sub>) (all m.ps. are corrected). The N-PhCH<sub>2</sub> derivative (III) of I (0.5 g.) and 25 cc. AcCl

refluxed 4 h. and diluted with 25 cc. petr. ether yielded 0.36 g. 3-acetylamino-5,6-diphenylpyrazinamide (IV), bright yellow platelets, m. 207-8° (from CHCl<sub>3</sub>-petr. ether). III (0.835 g.), 10 cc. Ac<sub>2</sub>O, and 10 cc. MeCN refluxed 4 h. and evaporated to dryness in vacuo, and the residue treated with EtOH and evaporated to dryness again gave 0.472 g. N-PhCH<sub>2</sub> derivative (V) of IV, tan crystals, m. 149-50° (from CH<sub>2</sub>Cl<sub>2</sub>-petr. ether). V (0.613 g.) refluxed 3 h. with 0.5 g. Na in 10 cc. absolute EtOH and poured into 50 cc. H<sub>2</sub>O gave 0.503 g. III, m. 186-7°. 3-PhCH<sub>2</sub> derivative of II gave similarly 93% III. I (2.53 g.), 5 cc. PhNCO, and 25 cc. dry pyridine refluxed 1 h. and cooled yielded 2.81 g. 3-(3-phenylureido)-5,6-diphenylpyrazinamide (VI), light yellow platelets, m. 240.5-1.5° (from aqueous EtOH and then aqueous HCONMe<sub>2</sub>). III (0.80 g.), 1 cc. PhNCO, and

10

cc. dry pyridine refluxed 2 h., cooled, treated with C, and diluted with petr. ether gave 1.03 g. N-PhCH<sub>2</sub> derivative (VII) of VI, sparkling white platelets, m. 210° (from aqueous EtOH). VI (0.523 g.) and 7 g. polyphosphoric acid (VIII) heated 2 h. at 150° (CO<sub>2</sub> was evolved), and diluted with 50 cc. H<sub>2</sub>O, and the precipitate sublimed at 200° and 2 mm. gave 0.134 g. I, m. 204-5°; the sublimation residue sublimed at 300° and 2 mm. gave 3,5,7-triphenyl-2,4(1H,3H)-pteridinedione (IX), colorless solid, m. 327-8° (decomposition). III and VIII heated 45 min. at 150° gave 52% I and 63% VII. I (0.97 g.), 2 cc. PhNCO, and 10 cc. pyridine refluxed 3 days, cooled, diluted with 40 cc. CH<sub>2</sub>Cl<sub>2</sub> and 250 cc. petr. ether, and filtered, and the filtrate evaporated to dryness gave 0.418 g. IX, white needles, m. 327-8° (decomposition) (from aqueous HCONMe<sub>2</sub>). III gave similarly 51% IX. I (1.52 g.), 3 cc. PhNCS, and 15 cc. pyridine refluxed 1 h., cooled, and diluted with 150 cc. petr. ether yielded 1.92 g. 3-(3-phenylthioureido) analog (X) of I, light yellow platelets, m. 233° (from aqueous HCONMe<sub>2</sub>). I (1.67 g.), 3 cc. PhNCS, and 15 cc. pyridine refluxed 3 days, cooled overnight, and filtered gave 1.87 g. 2-mercapto-3,6,7-triphenyl-4(3H)-pteridinone (XI), fine yellow needles, m. 301-2° (sublimed at 250° and 1 mm.). X heated similarly with PhNCS gave also XI. N-Bu derivative of I (2.70 g.), 3.5 cc. PhNCS, and 10 cc. pyridine refluxed 4 days, cooled, and diluted with 20 cc. CH<sub>2</sub>Cl<sub>2</sub> and 100 cc. petr. ether yielded 1.49 g. 2-PhNH analog of XI, pale yellow crystals, m. 323-4° (from aqueous HCONMe<sub>2</sub>). I (1.34 g.), 2 cc. iso-PrNCS, and 20 cc. pyridine refluxed 2 days, cooled, and diluted with 20 cc. CHCl<sub>3</sub> and 100 cc. petr. ether gave 1.05 g. 3-(3-isopropylthioureido) analog (XII) of VI, white platelets, m. 251-2° (from CH<sub>2</sub>Cl<sub>2</sub>-cyclohexane). III (1.04 g.), 1.2 cc. iso-PrNCS, and 15 cc. pyridine refluxed 2 days and poured onto 200 g. ice yielded 0.7 g. N-PhCH<sub>2</sub> derivative (XIII) of XII, pale yellow crystals, m. 170° (from 70%

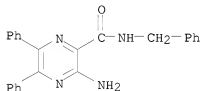
AcOH). XII (1.24 g.) refluxed 6 h. with 1 g. Na in 25 cc. absolute EtOH, poured into 100 cc. H<sub>2</sub>O, and filtered, and the orange solid digested with dilute HCl gave 0.174 g. 2-mercapto-3-isopropyl-6,7-diphenyl-4(3H)-pteridinone, light yellow needles, m. 270° (from aqueous EtOH); the filtrate acidified with concentrated HCl gave 0.72 g. 2-isopropylamino-6,7-diphenyl-4(3H)-pteridinone (XIV), bright lemon-yellow platelets, m. 324-5° (from aqueous EtOH). XIII (0.390 g.) refluxed 3 h. with 0.1 g. Na in 5 cc. absolute EtOH and poured into 50 cc. H<sub>2</sub>O yielded 0.30 g. 3-PhCH<sub>2</sub> derivative of XIV, sparkling yellow crystals, m. 305-7° (decomposition) (from aqueous HCONMe<sub>2</sub>). 3-Amino-5,6-diphenylthiopyrazinamide (XV) (1.1 g.) and 10 cc. BzCl refluxed 1.5 h., cooled, diluted with 50 cc. EtOH, refluxed 1 h., and evaporated to dryness, and the residue suspended in hot EtOH and filtered gave 2,6,7-triphenyl-4(3H)-pteridinethione, yellow crystals, m. 323-4° (sublimed). XV (1.23 g.), 3.4 cc. PhNCS, and 10 cc. pyridine refluxed 2 h., cooled, and diluted with 180 cc. petr. ether yielded 2.06 g. compound C47H33N9O (structure tentatively assigned), fine yellow needles, m. 369-70° (from aqueous HCONMe<sub>2</sub>), also obtained by refluxing the mixture for 3 days. It was recovered in 93% yield after refluxing 43 h. with concentrated HCl. XV (1.04 g.), 2 cc. PhNCS, and 10 cc. pyridine refluxed 36 h., diluted with 150 cc. hot petr. ether, and allowed to stand gave a small amount of unidentified, colorless needles, m. 72-157°, fine yellow needles, and cushions of orange prisms. The fine yellow needles and orange prisms recrystd. from pyridine-petr. ether yielded 1.15 g. 2-anilino-6,7-diphenyl-4(3H)pteridinethione, long yellow needles, m. 261-2°.

IT 7596-73-8P, Pyrazinamide, 3-amino-N-benzyl-5,6-diphenyl-857180-32-6P, Urea, 1-[3-(benzylcarbamoyl)-5,6-diphenylpyrazinyl]-3-phenyl- 857180-53-1P, Pyrazinamide, 3-acetamido-N-benzyl-5,6-diphenyl- 857183-71-2P, Urea, 1-(3-carbamoyl-5,6-diphenylpyrazinyl)-3-phenyl-2-thio- 857993-08-9P, Urea, 1-[3-(benzylcarbamoyl)-5,6-diphenylpyrazinyl]-3-isopropyl-2-thio-859297-19-1P, Pyrazinamide, 3-acetamido-5,6-diphenyl-859300-58-6P, Pyrazinamide, 3-(3-isopropyl-2-thioureido)-5,6-diphenyl- 859300-59-7P, Urea, 1-(3-carbamoyl-5,6-diphenylpyrazinyl)-3-phenyl-

RL: PREP (Preparation)  
(preparation of)

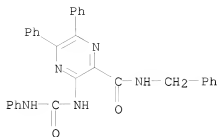
RN 7596-73-8 CAPLUS

CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl-N-(phenylmethyl)- (9CI) (CA INDEX NAME)



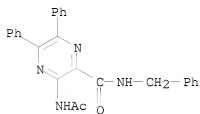
RN 857180-32-6 CAPLUS

CN Pyrazinamide, N-benzyl-5,6-diphenyl-3-(3-phenylureido)- (5CI) (CA INDEX NAME)



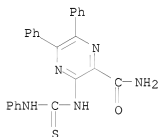
RN 857180-53-1 CAPLUS

CN Pyrazinamide, 3-acetamido-N-benzyl-5,6-diphenyl- (5CI) (CA INDEX NAME)



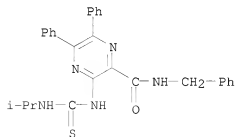
RN 857183-71-2 CAPLUS

CN Pyrazinamide, 5,6-diphenyl-3-(3-phenyl-2-thioureido)- (5CI) (CA INDEX NAME)



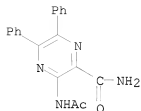
RN 857993-08-9 CAPLUS

CN Pyrazinamide, N-benzyl-3-(3-isopropyl-2-thioureido)-5,6-diphenyl- (5CI) (CA INDEX NAME)



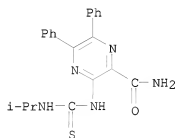
RN 859297-19-1 CAPLUS

CN Pyrazinamide, 3-acetamido-5,6-diphenyl- (5CI) (CA INDEX NAME)



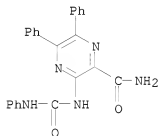
RN 859300-58-6 CAPLUS

CN Pyrazinamide, 3-(3-isopropyl-2-thioureido)-5,6-diphenyl- (5CI) (CA INDEX NAME)



RN 859300-59-7 CAPLUS

CN Pyrazinamide, 5,6-diphenyl-3-(3-phenylureido)- (5CI) (CA INDEX NAME)



L14 ANSWER 366 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1956:60180 CAPLUS

DOCUMENT NUMBER: 50:60180

ORIGINAL REFERENCE NO.: 50:11294b-d

TITLE: A comparison of the reactions of benzoin and benzil with formamide

AUTHOR(S): Novas, G. Gallas; Calvet, M. de la Morena; Archilla, F. Marquez

CORPORATE SOURCE: Alonso Barba Inst., Granada, Spain

SOURCE: Anales real soc. espan. fis. y quire. (Madrid) (1955), 51B, 633-8

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Bz2 (I) with HCONH2 (II) yields 2,4,5-tri-phenylimidazole (III) as the principal product, while the reaction with benzoin (IV) yields chiefly

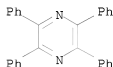
4,5-diphenylimidazole (V). I (10 g.) and 70 cc. II heated at reflux 12 hrs., cooled, filtered, the dried and pulverized solid treated with 50 cc. boiling 10% HCl, filtered hot, the acid treatment repeated several times, the combined filtrates made alkaline with dilute NH<sub>4</sub>OH, and the precipitate collected

on a filter, washed thoroughly with water, and recrystd. from dilute alc. yields 9% V. Recrystn. of the residue from the filtrates obtained from the HCl treatment from dilute alc. gives 75% III. I with a mixture of (NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub> and HCO<sub>2</sub>H gives similar results. IV (20 g.), 35 g. II, and 22 cc. HCO<sub>2</sub>H heated at reflux 10 hrs. and the product treated as above yields 75% V and 8% tetraphenylpyrazine (VI). A mixture of I and II treated with NaHSO<sub>3</sub> at 70° before it is heated to reflux gives V and VI, and III is completely absent.

IT 642-04-6P, Pyrazine, tetraphenyl-  
RL: PREP (Preparation)  
(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 367 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1956:52652 CAPLUS

DOCUMENT NUMBER: 50:52652

ORIGINAL REFERENCE NO.: 50:10103e-g

TITLE: Route to 4-aminopteridines

AUTHOR(S): Taylor, E. C., Jr.; Paudler, W. W.

CORPORATE SOURCE: Princeton Univ., Princeton, NJ

SOURCE: Chemistry & Industry (London, United Kingdom) (1955) 1061-2

CODEN: CHINAG; ISSN: 0009-3068

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 50:52652

AB A new route for 4-amino-5,6-diphenylpteridines (I) is described.

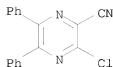
2-Hydroxy-5,6-diphenylpyrazinamide (II) (Jones, C.A. 43, 3009h) gave 99% yield 2-chloro-3-cyano-5,6-diphenylpyrazine (III) when heated in a sealed tube with PCl<sub>3</sub>. III was also obtained in 80% yield by heating a mixture of II, POCl<sub>3</sub>, and PCl<sub>5</sub>. Fusion of III with guanidine carbonate, urea, or thiourea gave 65, 59, and 51% 2-amino, 2-hydroxy, and 2-mercapto derivs. of I, resp. III with N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O gave 2-chloro-5,6-diphenylpyrazinoic acid hydrazide, or when repeated in the presence of KI gave 3-amino-5,6-diphenyl-1-pyrazolo[b]pyrazine. III gave 2-amino-5,6-diphenylpyrazinamide when treated with NH<sub>4</sub>OH and KI, or 2-amino-3-cyano-5,6-diphenylpyrazine when fused with NH<sub>4</sub>OAc.

IT 34122-24-2P, Pyrazinonitrile, 3-chloro-5,6-diphenyl-  
70186-75-3P, Pyrazinonitrile, 3-amino-5,6-diphenyl-  
101445-25-4P, Pyrazinamide, 3-amino-5,6-diphenyl-  
859063-69-7P, Pyrazinoic acid, 3-chloro-5,6-diphenyl-, hydrazide  
RL: PREP (Preparation)  
(preparation of)

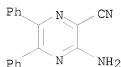
RN 34122-24-2 CAPLUS

CN Pyrazinecarbonitrile, 3-chloro-5,6-diphenyl- (8CI, 9CI) (CA INDEX NAME)

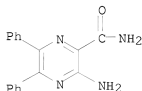




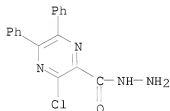
RN 70186-75-3 CAPLUS  
CN Pyrazinecarbonitrile, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 101445-25-4 CAPLUS  
CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 859063-69-7 CAPLUS  
CN INDEX NAME NOT YET ASSIGNED



L14 ANSWER 368 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1956:24014 CAPLUS  
DOCUMENT NUMBER: 50:24014  
ORIGINAL REFERENCE NO.: 50:4870f-i  
TITLE: Osone hydrazones. V. Information on osazone formation  
AUTHOR(S): Henseke, Gunter; Dalibor, Horst  
CORPORATE SOURCE: Ernst-Moritz-Arndt Univ., Greifswald, Germany  
SOURCE: Chemische Berichte (1955), 88, 521-6  
CODEN: CHBEAM; ISSN: 0009-2940  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
OTHER SOURCE(S): CASREACT 50:24014  
AB cf. preceding abstract The reaction of asymmetric disubstituted hydrazines with benzoin (I) under the conditions for osazone formation led only to the formation of benzil monohydrazones. I with H2NNMePh (II) gave benzil monomethylphenylhydrazone (III), m. 83°, with H2NNPh2 (IV), benzil

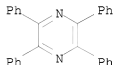
monodiphenylhydrazine (V), m. 107°, and with H2NN(CH2Ph)Ph (VI) benzil monobenzylphenylhydrazine (VII), m. 92°. III, V, and VII were also prepared by the action of II, IV, and VI, resp., on benzil (VIII). When, however, 1 mole I was boiled with 3 moles II in alc. HOAc, or with 1 mole HOAc and no other solvent, benzil methylphenylsazone was produced. One mole each of I and II yielded 2,3,5,6-tetraphenylpyrazine (IX). Under similar conditions I with IV and with VI both produced IX. Benzoin phenylhydrazine was produced by the action of PhNHNH2 on I. I and VIII with p-BrC6H4NHNH2 yielded benzoin and benzil p-bromophenylhydrazine, resp. Benzil methylphenyl-phenylsazone, m. 209°, benzil diphenyl-phenylsazone, m. 163°, and benzil benzylphenyl-phenylsazone, m. 118°, were prepared by the action of PhNHNH2 on III, V, and VII, resp. In the reactions with hydrazines, PhNH2, PhNHMe, Ph2NH, PhNHCH2Ph were isolated as by-products. Benzil phenylsazone was obtained from benzoin phenylhydrazine by disproportionation.

IT 642-04-6P, Pyrazine, tetraphenyl-  
RL: PREP (Preparation)

(formation from benzoin reaction with phenylhydrazine derivs.)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 369 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1956:12389 CAPLUS

DOCUMENT NUMBER: 50:12389

ORIGINAL REFERENCE NO.: 50:2607b-4

TITLE: Pteridine derivatives. I. Synthesis of  
2-amino-4-hydroxypteridines

AUTHOR(S): Dick, G. P. G.; Wood, H. C. S.

CORPORATE SOURCE: Roy. Tech. Coll., Glasgow, UK

SOURCE: Journal of the Chemical Society (1955) 1379-82

CODEN: JCSOA9; ISSN: 0368-1769

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Methylglyoxal (I) was treated with H2NCH(CONH2)2 (II) by the method of Jones (C.A. 43, 3009e), the yellow Na salt was separated after 2 days standing at 0°, and acidified to give 13 g. 2-hydroxy-6-methyl-3-pyrazinecarboxamide (III), yellow needles, m. 219-20° (decomposition) (from MeOH). I (12 g.) in H2O was left 0.5 hr. at room temperature

with 10 g. NaHSO3, then heated with 20 g. II to yield 70% III.

2-Hydroxy-3-pyrazinecarboxamide (1 g.) and 1 g. NaOH in EtOH were heated 6 hrs. at 170° in a bomb to yield 0.61 g. 2-aminopyrazine-3-

carboxylic acid, m. 218-19° (decomposition). Similar hydrolysis of the diphenyl amide gave 91% 2-hydroxy-5,6-diphenyl-3-pyrazinecarboxylic acid (IV), needles, m. 216-17° (decomposition) (from aqueous Me2CO). The III Na salt (3 g.) in 20 cc. 5N NaOH was refluxed 30 hrs., the solution treated with HCl to a pH 4-5, treated with C, and concentrated to give 1.3 g.

2-hydroxy-6-methylpyrazine-3-carboxylic acid (V), needles, m. 188-9° (decomposition). IV (7.5 g.) in boiling MeOH was treated for 20 min. with dry HCl, then refluxed 2 hrs. to give 6.65 g.

2-hydroxy-3-methoxycarbonyl-5,6-diphenylpyrazine (VI), yellow needles, m. 204-5°. V was similarly esterified to give 100% Me ester (VII), needles, m. 174-5° (decomposition). VII with POC13 gave

2-chloro-3-methoxycarbonylpyrazine (VIII). VI (3.5 g.) and 23 g. POC13 containing 1 drop concentrated H2SO4 were heated in a Carius tube for 10 min.

at

110°, the tube sealed and heated 5.5 hrs. at 160° to give 3 g. (81%) 2-chloro-3-methoxycarbonyl-5,6-diphenylpyrazine (IX), small plates, m. 116-16.5° (from MeOH-light petroleum followed by sublimation); the yield at 150° was 50% and at 190° 14%; the use of POC13PhNet2 or POC13-PC15 was unsuccessful. VII (0.3 g.) similarly refluxed 5 hrs. with POC13-H2SO4 gave 0.2 g. 2-chloro-3-methoxycarbonyl-6-methylpyrazine (X), plates, m. 84-5° (from light petroleum). VIII (1 g.) heated 0.5 hr. at 170° with 2 g. guanidine carbonate (XI), the residual solid dissolved in hot H2O, filtered, the filtrate treated with C, filtered, brought to pH 5 with 3N HCl, and the solids collected to give 0.84 g. 2-amino-4-hydroxypteridine (XII), m. above 360°. XII was purified by solution in 2N NaOH, filtered, 10N NaOH added to precipitate

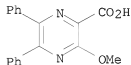
the Na

salt, which was collected, washed with 2.5N NaOH, dried, dissolved in hot H2O, and precipitated with 3N HOAc to give pure XII, yellow. VIII (2 g.) was refluxed 30 hrs. with HN:C(NH2)2 in MeOH to give 0.375 g. XII. The yield fell when heated in a sealed tube at higher temperature or when the reflux period was reduced. IX (0.2 g.) and 0.4 g. XI were fused and the crude product similarly purified to yield 0.13 g. 2-amino-4-hydroxy-6,7-diphenylpteridine (XIII), m. above 360°. XIII when crystallized from HCONMe2 gave a yellow solid. X (0.135 g.) similarly treated with 0.4 g. XI gave 0.105 g. 2-amino-4-hydroxy-7-methylpteridine (XIV), m. above 360°, purified via its Na salt. Authentic XIV was prepared from 2,4,6-triamino-6-hydroxypyrimidine. IX (0.2 g.) and 0.06 g. HN:C(NH2)2.HCl were refluxed 12 hrs. with 0.06 g. Na in 7 cc. dry MeOH to yield 73% 2-methoxy-5,6-diphenylpyrazine-3-carboxylic acid (XV), small white needles, m. 180-1° (decomposition) (from aqueous MeOH); Na salt, white plates, m. 254-6° (decomposition) (from H2O). XV was obtained from NaOMe and IX in the absence of HN:C(NH2)2. XV (0.2 g.) was esterified with MeOH-dry HCl to give 0.2 g. 2-methoxy-3-methoxy-carbonyl-5,6-diphenylpyrazine, white needles, m. 118.5-19.0°.

IT 34121-80-7, Pyrazinoic acid, 3-methoxy-5,6-diphenyl-  
(and derivs.)

RN 34121-80-7 CAPLUS

CN Pyrazinecarboxylic acid, 3-methoxy-5,6-diphenyl- (8CI) (CA INDEX NAME)

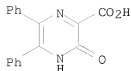


IT 34226-38-5P, Pyrazinoic acid, 3-hydroxy-5,6-diphenyl-  
859063-67-5P, Pyrazinoic acid, 3-chloro-5,6-diphenyl-, methyl  
ester 859064-09-8P, Pyrazinoic acid, 3-hydroxy-5,6-diphenyl-,  
methyl ester

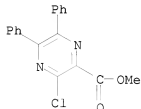
RL: PREP (Preparation)  
(preparation of)

RN 34226-38-5 CAPLUS

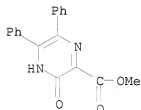
CN Pyrazinecarboxylic acid, 3,4-dihydro-3-oxo-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 859063-67-5 CAPLUS  
CN INDEX NAME NOT YET ASSIGNED



RN 859064-09-8 CAPLUS  
CN INDEX NAME NOT YET ASSIGNED



L14 ANSWER 370 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1955:56565 CAPLUS  
 DOCUMENT NUMBER: 49:56565  
 ORIGINAL REFERENCE NO.: 49:10877e-1  
 TITLE: The condensation of aldehydes and arylsulfonamides  
 AUTHOR(S): Lichtenberger, Jean; Fleury, Jean Pierre; Barette, Bernard  
 CORPORATE SOURCE: Ecole super. chim., Mulhouse  
 SOURCE: Bulletin de la Societe Chimique de France (1955) 669-80  
 CODEN: BSCFAS; ISSN: 0037-8968  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 OTHER SOURCE(S): CASREACT 49:56565  
 AB Arylsulfonamides (I) react with anhydrous chloral (1 hr. at 90°) to give ArSO<sub>2</sub>NHCH(OH)CCl<sub>3</sub> (II), crystalline, presumably covalent, solids having Ar, m.p. (Maquenne block), decomposition point, and m.p. of monoacetate as follows: o-MeC<sub>6</sub>H<sub>4</sub>, 148°, 92°, 135°; m-MeC<sub>6</sub>H<sub>4</sub>, 178°, 98°, 158°; 2,4-Me<sub>2</sub>C<sub>6</sub>H<sub>3</sub>, 127.5°, 91°, 143°; 2,4,6-Me<sub>3</sub>C<sub>6</sub>H<sub>2</sub>, 108°, 89°, 125°; β-C<sub>10</sub>H<sub>7</sub>, 225°, 98°, 156°; p-MeC<sub>6</sub>H<sub>4</sub> (III), 153°, 95°, 135°; Ph, 181°, 105°, 141°; PhCH<sub>2</sub>, 176.5°, 95°, 168°; p-MeOC<sub>6</sub>H<sub>4</sub>, 147°, 98°, 120°; p-ClC<sub>6</sub>H<sub>4</sub>, 185°, 103°, 160°; p-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, 165°, 95°, 135°. II are also

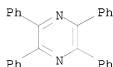
prepared from ArSO<sub>2</sub>Cl (IV) and chloral-ammonia. The reaction of I with furfural and ZnCl<sub>2</sub>, or IV with furfuralamide in pyridine, gives ArSO<sub>2</sub>N:CHC<sub>4</sub>H<sub>3</sub>O (V), colorless solids having Ar and m.p. as follows: Ph, 127-8°; p-MeC<sub>6</sub>H<sub>4</sub>, 101-2°; o-MeC<sub>6</sub>H<sub>4</sub>, 73-4°; β-C<sub>10</sub>H<sub>7</sub>, 149-50°. I with ArCHO and an acid catalyst (ZnCl<sub>2</sub> at 130°, AlCl<sub>3</sub> in PhNO<sub>2</sub> at 140°, or BF<sub>3</sub> in PhNO<sub>2</sub> at 20°) gives Ar'SO<sub>2</sub>N:CHAr (VI) with the following Ar, with m.p. given when Ar' = Ph, p-MeC<sub>6</sub>H<sub>4</sub>, and o, MeC<sub>6</sub>H<sub>4</sub> resp.: p-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub> (VII), 190-1°, 206-7°, 140-1°; 2,4,6-(O<sub>2</sub>N)<sub>3</sub>C<sub>6</sub>H<sub>2</sub>, 193-4°, 173-4°, 192-3°; p-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, 205-6°, 174.5-5.5°, 139-40°. When Ar = Ph, the product is 3% tetraphenylpyrazine, m. 246°. II and V are hydrolyzed by H<sub>2</sub>O at 99°, VII at 50-60°, and III by cold H<sub>2</sub>O. II are cleaved by alc., acids, and alkali. V and VI react as Schiff bases. The mechanism is compared with the reaction of carbonamides with RCHO.

IT 642-04-6P, Pyrazine, tetraphenyl-  
RL: PREP (Preparation)

(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 371 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1955:4896 CAPLUS

DOCUMENT NUMBER: 49:4896

ORIGINAL REFERENCE NO.: 49:1050i,1051a-b

TITLE: Stereoisomerism of 2,3,5,6-tetraphenylpyrazine

AUTHOR(S): Hayashi, Taro

CORPORATE SOURCE: Ochanomizu Univ.

SOURCE: Nat. Sci. Rept. Ochanomizu Univ. Tokyo (1951), 1, 64-70

DOCUMENT TYPE: Journal

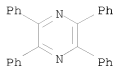
LANGUAGE: Unavailable

AB If the piperazine ring is in the chair configuration, 2,3,5,6-tetraphenylpiperazine (I) can have 7 geometrical isomers. I is obtained from 2,3,5,6-tetraphenylpyrazine (amaron) (II) and trans-2,3,5,6-tetraphenyl-2,3-dihydropyrazine (III). II, obtained from meso-stilbenediamine and benzil, is reduced by Na and boiling amyl alc. to 4 isomers, α-, colorless plate crystals, m. 161-2°, β-, colorless fine prism crystals, m. 209.5-10.5°; γ-colorless prism crystals, m. 266-8° and δ-, colorless plate crystals, m. 300-2°, separated by fractional crystallization from acetone. III, obtained from dl-stilbenediamine and benzil, is reduced by Na and boiling amyl alc. Besides the 4 isomers above mentioned, reduction of III by Al-Hg in ethereal solution gives the δ-isomer, colorless fine needle crystals, m. 291-2°.

IT 642-04-6, Pyrazine, tetraphenyl-  
(reduction of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 372 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1954:25073 CAPLUS

DOCUMENT NUMBER: 48:25073

ORIGINAL REFERENCE NO.: 48:4553h-i, 4554a-i, 4555a-d

TITLE: Pteridines. X. A new approach to the synthesis of pteridines

AUTHOR(S): Taylor, E. C., Jr.; Carbon, John A.; Hoff, Dale R.

CORPORATE SOURCE: Univ. of Illinois, Urbana

SOURCE: Journal of the American Chemical Society (1953), 75, 1904-8

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 48:25073

GI For diagram(s), see printed CA Issue.

AB cf. C.A. 48, 2719c. A new synthesis of pteridines is described involving the preliminary synthesis of a 2,4(1H,3H)-pteridinedione (lumazine) by the conventional method and the subsequent aminolytic cleavage of the pyrimidine portion of the lumazine to give a 3-amino-N-substituted pyrazinamide, followed by its ring closure to the desired pteridine. This method permits a much wider variation in the structure of the pyrimidine ring than does the conventional approach. Dry freshly distilled BuNH<sub>2</sub> (100 cc.) and 15 g. 6,7-diphenyl-2,4(1H,3H)-pteridinedione (I) heated 12 h. in a sealed tube at 180°, the clear light brown solution treated with Norit, the excess BuNH<sub>2</sub> removed in vacuo, and the residue diluted with 50 cc. hot EtOH and then hot H<sub>2</sub>O to incipient crystallization gave 8.8 g. (53.3%) 3-amino-N-butyl-5,6-diphenylpyrazinamide (II), bright yellow prisms, m. 146-7° (from CHCl<sub>3</sub>-aqueous EtOH). 3-Amino-N-benzyl-5,6-diphenylpyrazinamide (0.520 g.) in 20 cc. HC(OEt)<sub>3</sub> (III) and 20 cc. Ac<sub>2</sub>O refluxed 5 h., and the solution evaporated to dryness in vacuo yielded 0.386 g. (72.3%) 3-benzyl-6,7-diphenyl-4(3H)-pteridinone (IV), white platelets, m. 248° (from CHCl<sub>3</sub>-petr. ether). II (1.0 g.) in 20 cc. 98-100% HCO<sub>2</sub>H and 20 cc. Ac<sub>2</sub>O refluxed 5 h., and the clear light yellow solution evaporated repeatedly to dryness in vacuo with 50-cc. portions of EtOH gave 0.337 g. (32.8%) 3-Bu analog (V) of IV, white platelets, m. 194-5° (from CHCl<sub>3</sub>-aqueous EtOH). II (0.50 g.), 20 cc. III, and 20 cc. Ac<sub>2</sub>O refluxed 5 h. similarly gave 0.396 g. (77%) V. 3-Amino-N-benzyl-5,6-diphenylpyrazinamide (1.0 g.) and 25 cc. ClCO<sub>2</sub>Et (VI) refluxed 20 h., and the resulting clear yellow solution evaporated repeatedly to dryness with 50-cc. portions of EtOH gave 0.996 g. (93.7%) N-benzyl-3-carbethoxyamino-5,6-diphenylpyrazinamide (VII), colorless prisms, m. 129-30° (from CHCl<sub>3</sub>-petr. ether). II (2.0 g.), and 40 cc. VI refluxed 20 h. gave similarly 1.539 g. (63.7%) N-Bu analog (VIII) of VII, colorless prisms, m. 110-11° (from CHCl<sub>3</sub>-petr. ether). VII (0.574 g.) and alc. NaOEt (from 0.5 g. Na in 70 cc. absolute EtOH) refluxed 20 h. gave 0.211 g. (40.9%) 3-benzyl-6,7-diphenyl-2,4(1H,3H)pteridinedione (IX), long colorless needles, m. 194-5° (from CHCl<sub>3</sub>-petr. ether). VIII (1 g.) similarly gave 0.80 g. (88.8%) 3-Bu analog of IX, long white needles, m. 246-7° (from CHCl<sub>3</sub>-petr. ether). 3-Amino-N-benzyl-5,6-diphenylpyrazinamide (X) (0.597 g.) and 25 cc. HCONH<sub>2</sub> heated 3 h. at 190°, and the mixture cooled and diluted with H<sub>2</sub>O yielded 0.304 g. (64%) 6,7-diphenyl-4(3H)-pteridinone (XI), m. 297-8° (from aqueous

HCONMe2), also obtained by refluxing X with HCONH2 containing 2 cc. dilute HCO2H. II similarly gave 52% XI. Me 3-amino-5,6-diphenylpyrazinoate (0.856 g.) in 75 cc. MeOH saturated with anhydrous NH3 at 0° and heated 1 h. at 120° in a sealed tube yielded 0.700 g. (86%) 3-amino-5,6-diphenylpyrazinamide (XII), m. 204-5° (from aqueous EtOH). XII (0.529 g.), 1.0 g. P2S5, and 15 cc. dry pyridine refluxed 1 h., the deep red solution cooled, poured into 200 cc. H2O, the resulting orange colloidal suspension dissolved by the addition of a small amount of 10% NaOH, the solution treated with C, filtered, and the filtrate acidified with glacial AcOH gave 0.304 g. (54.6%) 3-amino-5,6-diphenylthiopyrazinamide (XIII), orange needles, m. 158-60° (from aqueous EtOH). XI (2.975 g.), 4 g. P2S5, and 50 cc. anhydrous pyridine refluxed 2 h. similarly gave 2.34 g. (75%) 6,7-diphenyl-4(3H)-pteridinethione (XIV), bright red platelets, m. 270-80° (decomposition) (from aqueous HCONMe2). XIII (0.286 g.) in 10 cc. III and 10 cc. Ac2O refluxed 5 h. gave 0.164 g. (55.4%) XIV, bright red shiny platelets. XIV (0.5 g.), 1 cc. PhCH2NH2, 1 g. HgO, and 30 cc. EtOH refluxed 5 h., the mixture filtered, the black residue washed with 10 cc. hot EtOH, and the filtrate combined with the washings and diluted with H2O until crystallization began yielded 0.61 g. (99%) 4-benzylamino-6,7-diphenylpteridine (XV), light yellow platelets, m. 178-9° (from aqueous Me2CO). XIV (0.951 g.), 1.5 cc. BuNH2, 1 g. HgO, and 20 cc. absolute EtOH refluxed 2.5 h. similarly gave 0.870 g. (74.3%) N-Bu analog (XVI) of XV, bright yellow plates, m. 150-1° (from aqueous EtOH). XIV (2.0 g.) and 50 cc. absolute EtOH saturated with NH3 at 0° and heated in a sealed tube 10 h. at 130° gave 1.59 g. (84%) 4-amino-6,7-diphenylpteridine, light yellow needles, m. 175° (from aqueous Me2CO). Refluxing 0.924 g. XIV in 5 cc. CHCl3 and 20 cc. absolute EtOH with 0.8 g. HgO yielded 0.414 g. (33%) mercuric salt of XIV, light yellow crystals, m. 268-71° (from CHCl3-absolute EtOH). XV (0.20 g.) in 10 cc. 6N HCl refluxed 0.5 h. and the cooled mixture neutralized with NH4OH gave 0.14 g. (93%) XI, m. 297-8°. XI (88%) was also formed by hydrolysis of XVI. II (1.75 g.), 2.0 g. P2S5, and 25 cc. dry pyridine refluxed 1 h., the mixture cooled, poured into 150 cc. H2O, and the precipitate washed with H2O and recrystd. from absolute EtOH gave 1.54 g. (83.4%) 3-amino-N-butyl-5,6-diphenylthiopyrazinamide (XVII), bright yellow needles, m. 168-9°. XVII (0.635 g.), 0.7 g. freshly fused NaOAc, 10 cc. 98-100% HCO2H, and 10 cc. Ac2O refluxed 5 h. gave 0.441 g. (67.6%) 3-butyl-6,7-diphenyl-4(3H)-pteridinethione (XVIII), orange needles, m. 193-5° (from CHCl3-EtOH). XVII (1.53 g.) in 10 cc. HC(OEt)3 and 10 cc. Ac2O refluxed 3 h. yielded 0.962 g. (61.2%) XVIII. XVII (1.139 g.) in 30 cc. ClCO2Et refluxed 20 h., the solution evaporated to dryness in vacuo, and the residue evaporated 3 times with 50-cc. portions of absolute EtOH yielded 1.11 g. (77%) carbethoxy derivative (XIX), microcryst. orange solid, m. 173-4° (from CHCl3-EtOH). XIX heated 15 min. with 5 cc. 10% aqueous NaOH in 20 cc. EtOH gave 73% 1,2-dihydro-2-oxo derivative of XVIII, orange-red solid, m. 205-9° (from aqueous EtOH). XVIII (0.179 g.) in 1.5 cc. CHCl3 and 10 cc. absolute EtOH refluxed 6 h. with 0.2 g. HgO while a continuous stream of NH3 was passed through the mixture, the mixture filtered hot, and the filtrate evaporated to a small volume deposited 0.119 g. (69.8%) 3-butyl-4(3H)imino-6,7-diphenylpteridine, yellow platelets, m. 149-51°. 3-Amino-5,6-diphenylpyrazinoic acid piperidide (1.50 g.) in 50 cc. VI refluxed 5 h. and the mixture worked up in the usual manner gave 1.42 g. (79%) 3-carbethoxyamino-5,6-diphenylpyrazinoic acid piperidine (XX), yellow platelets, m. 174-5° (from aqueous Me2CO and then CH2Cl2-petr. ether). XX (0.50 g.) in 40 cc. EtOH saturated with dry NH3 and heated 6 h. in a sealed tube at 155°, the solution evaporated to dryness, the residue dissolved in dilute NH4OH, and the solution acidified with glacial AcOH gave 0.330 g. (90%) I, colorless microcryst. solid, m. 320-5°.

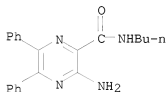
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857992-95-1P, Pyrazinecarbamic acid, 3-(benzylcarbamoyl)-5,6-diphenyl-, ethyl ester 857993-29-4P, Pyrazinecarbamic acid, 3-(butylcarbamoyl)-5,6-diphenyl-, ethyl ester 859063-58-4P, Pyrazinecarbamic acid, 5,6-diphenyl-3-piperidinocarbonyl-, ethyl ester  
 RL: PREP (Preparation)

(preparation of)

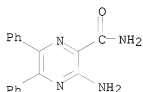
RN 7509-57-1 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-butyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



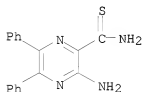
RN 101445-25-4 CAPLUS

CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



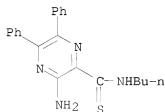
RN 110490-39-6 CAPLUS

CN Pyrazinamide, 3-amino-5,6-diphenylthio- (6CI) (CA INDEX NAME)



RN 857180-46-2 CAPLUS

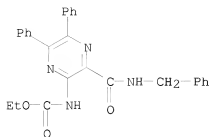
CN Pyrazinamide, 3-amino-N-butyl-5,6-diphenylthio- (5CI) (CA INDEX NAME)



RN 857992-95-1 CAPLUS

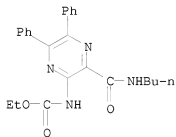
CN Pyrazinecarbamic acid, 3-(benzylcarbamoyl)-5,6-diphenyl-, ethyl ester (5CI) (CA INDEX NAME)





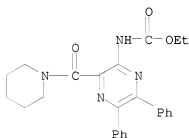
RN 857993-29-4 CAPLUS

CN Pyrazinecarbamic acid, 3-(butylcarbamoyl)-5,6-diphenyl-, ethyl ester (5CI)  
(CA INDEX NAME)



RN 859063-58-4 CAPLUS

CN INDEX NAME NOT YET ASSIGNED



L14 ANSWER 373 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1954:14779 CAPLUS

DOCUMENT NUMBER: 48:14779

ORIGINAL REFERENCE NO.: 48:2719b-e

TITLE: Pteridines. IX. Hydrolytic ring cleavage of  
3-benzyl-6,7-diphenyl-4(3H)-pteridinone  
Taylor, E. C., Jr.

AUTHOR(S): Univ. of Illinois, Urbana

CORPORATE SOURCE: Journal of the American Chemical Society (1952), 74,  
2380-1

SOURCE: CODEN: JACSAT; ISSN: 0002-7863

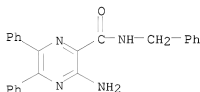
DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. C.A. 48, 688c, 689g. 5,6-Diamino-4-hydroxy-2-mercaptopyrimidine (15.0

g.) in 300 cc. boiling water dissolved by the addition of 20% Na2CO3, the pH adjusted to 10 with dilute HCl, 80 g. wet Raney Ni added portionwise, the mixture refluxed 4 hrs., cooled, filtered, treated with 12.4 g. Bz2 in 100 cc. MeCOEt and 350 cc. EtOH, refluxed 8 hrs., acidified, and cooled yielded 13.2 g. 6,7-diphenyl-4(3H)-pteridinone (I), m. 297-8° (decomposition). I (0.5 g.), 30 cc. MeOH, 0.2 cc. PhCH2Cl, and 0.16 g. KOH refluxed 2 hrs., and the mixture treated with 15 cc. 2 N NaOH and warmed yielded 0.483 g. 3-amino-N-benzyl-5,6-diphenyl-4-pyrazinamide (II), m. 188.5-89°. 3-Benzyl-6,7-diphenyl-4(3H)-pteridinone (III) in 30 cc. MeOH treated 0.1 g. KOH in 5 cc. water, and the mixture refluxed 10 min. and diluted with 5 cc. water yielded 64 mg. II, m. 188.5-89°. I (1.0 g.), 0.186 g. KOH, 3.8 cc. PhCH2Cl, and 30 cc. MeOH refluxed 1 hr., and the mixture treated with 3 cc. AcOH and hot water to incipient crystallization yielded 0.26 g. III, m. 248°; dilution of the EtOH filtrate yielded 0.19 g. II, m. 187°; the mother liquor on dilution with 1 volume water yielded 0.195 g. I. In another experiment refluxing 24 hrs. yielded 0.21 g. III, m. 248°.

IT 7596-73-8P, Pyrazinamide, 3-amino-N-benzyl-5,6-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 7596-73-8 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl-N-(phenylmethyl)- (9CI) (CA  
 INDEX NAME)



L14 ANSWER 374 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1954:3618 CAPLUS  
 DOCUMENT NUMBER: 48:3618  
 ORIGINAL REFERENCE NO.: 48:688c-i,689a  
 TITLE: Aminolysis of heterocyclic amides. I. The aminolysis  
 of 6,7-diphenyllumazine  
 AUTHOR(S): Taylor, E. C., Jr.  
 CORPORATE SOURCE: Univ. of Illinois, Urbana  
 SOURCE: Journal of the American Chemical Society (1952), 74,  
 1651-5  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB cf. following abstract An alkylamine with 6,7-diphenyllumazine (I) gives first an N-substituted amide of a 3-(3-alkylureido)-5,6-diphenylpyrazinoic acid, which can then be converted to an N-substituted amide of 3-amino-5,6-diphenylpyrazinoic acid by further reaction with the amine. The mechanism of these transformations is discussed and the results are interpreted as a substantiation for the ring cleavages previously postulated (cf. C.A. 47, 137h) in the reaction of 4-NH2 and 4-hydroxy-2-mercaptopteridines with alkylamines. I (3.0 g.) in 20 cc. PhCH2NH2 (II) refluxed 15 min. and diluted with 50 cc. absolute EtOH yielded 2.18 g. N-benzyl-3-(3-benzylureido)-5,6-diphenylpyrazinamide (III). EtOH, m. 88-93°; III m. 150-1°. III (0.60 g.), 10 cc. Ac2O, and 3 g. NaOAc refluxed 2 h., and the cooled mixture poured on ice and let stand overnight yielded III, m. 150-1°. III (0.50 g.) in 10 cc. II refluxed 8 h., diluted with 20 cc. EtOH, heated to boiling and diluted with

water to incipient precipitation yielded 0.348 g. 3-amino-N-benzyl-5,6-diphenylpyrazinamide (IV), m. 188.5-9°; the filtrates from IV concentrated to 20 cc. and diluted with 20 cc. water yielded N,N'-dibenzylurea (V), 168°. I and II refluxed 8 h. yielded directly IV and V. H2SO4 (2 cc.) added slowly to 1.0 g. 3-amino-5,6-diphenylpyrazinoic acid in 15 cc. absolute EtOH, the solution let stand 24 h. at room temperature, and poured into 75 cc. water yielded 0.91 g. Me ester (VI), m. 204-6°. VI (165 mg.) and 2 cc. II refluxed 10 min., diluted with 15 cc. 50% EtOH and cooled yielded 190 mg. IV, m. 188.5-89°. IV (1.0 g.), 20 cc. 85% HCO2H, 20 cc. Ac2O, and 1.0 g. NaOAc refluxed 5 h. and the solution evaporated to dryness yielded 0.42 3-benzyl-6,7-pteridin-4(3H)-one, m. 248°. I (0.50 g.) and 15 cc. morpholine refluxed 14 h. yielded 0.53 g. 3-(morpholinocarbonylamino)-5,6-diphenylpyrazinoic acid morpholide (VII), m. 262-4°. VII (1.0 g.) sealed in 20 cc. morpholine heated 12 h. at 140° and 6 h. at 190° yielded 0.64 g. 3-amino-5,6-diphenylpyrazinoic acid morpholide (VIII), m. 190.5-1°. I and morpholine heated 12 h. at 190° yielded VIII directly. I (3.0 g.), 30 cc. piperidine, and 10 cc. HCONMe2 refluxed 16 h., filtered, and the hot filtrate treated with boiling water to incipient turbidity yielded 1.67 g. 3-(piperidinocarbonylamino)-5,6-diphenylpyrazinoic acid piperide, m. 215-17°. I (5.0 g.) in 50 cc. piperidine heated 20 h. at 200° yielded 3.8 g. 3-amino-5,6-diphenylpyrazinoic acid piperide, m. 156°. I (0.50 g.) in 15 cc. HOCH2CH2NH2 refluxed 12 h. yielded 0.453 g. 3-amino-N-(β-hydroxyethyl)-5,6-diphenylpyrazinamide, m. 186.5-87°. I (2.0 g.) and 40 cc. NH4OH heated 16 h. at 185° yielded 1.67 g. 3-amino-5,6-diphenylpyrazinamide (IX), m. 203.5-5°. IX (0.3 g.) and 1 cc. II refluxed 15 min., diluted with 10 cc. EtOH, and hot water added to incipient crystallization yielded 0.31 g. IV. IX (0.06 g.), 5 cc. piperidine, and 2 cc. HCONMe2 refluxed 16 h. yielded 0.053 g. IX, m. 203.5-5°. p-O2NC6H4NHCONH2 (2.0 g.) and 20 cc. piperidine refluxed 8 h. yielded 2.43 g. 1-(p-nitrophenyl)-3-(piperidino)urea, m. 165-6°. I (1.0 g.) and 10 cc. 85% H4N2.H2O refluxed 6 h. and the mixture let stand 3 h. at 0° yielded 0.705 g. 3-amino-5,6-diphenylpyrazinoic acid hydrazide (X), m. 250-1°. The mother liquors from X evaporated to dryness, the residue washed with water, dried, extracted with CH2Cl2, and the extract diluted with petr. ether yielded 3-amino-6,7-diphenyl-2,4(1H,3H)-pteridinedione, m. 259-60° (decomposition); evaporation of the filtrates yielded about 0.015 g. X.

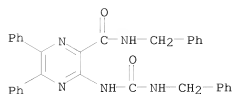
IT 7509-58-2P, Urea, 1-benzyl-3-[3-(benzylcarbonyl)-5,6-diphenylpyrazinyl]- 7596-73-8P, Pyrazinamide, 3-amino-N-benzyl-5,6-diphenyl- 101445-25-4P, Pyrazinamide, 3-amino-5,6-diphenyl- 856846-54-3P, Piperidine, 1-(3-amino-5,6-diphenylpyrazinoyl)- 857180-39-3P, Ethyl alcohol, compound with N-benzyl-3-(3-benzylureido)-5,6-diphenylpyrazinamide 857183-30-3P, Pyrazine, 2-amino-3-morpholinocarbonyl-5,6-diphenyl- 857183-65-4P, Pyrazinamide, 3-(2-hydroxyethylamino)-5,6-diphenyl- 857184-12-4P, Pyrazine, 2-(1-piperidinecarboxamido)-3-piperidinocarbonyl-5,6-diphenyl- 857184-21-5P, Pyrazine, 2-(4-morpholinecarboxamido)-3-morpholinocarbonyl-5,6-diphenyl- 857984-45-3P, Pyrazinoic acid, 3-amino-5,6-diphenyl-, methyl ester 857984-47-5P, Pyrazinoic acid, 3-amino-5,6-diphenyl-, hydrazide

RL: PREP (Preparation)

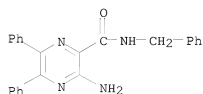
(preparation of)

RN 7509-58-2 CAPLUS

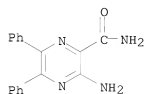
CN Pyrazinecarboxamide, 5,6-diphenyl-N-(phenylmethyl)-3-[[[(phenylmethyl)amino]carbonyl]amino]- (9CI) (CA INDEX NAME)



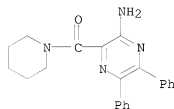
RN 7596-73-8 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl-N-(phenylmethyl)- (9CI) (CA INDEX NAME)



RN 101445-25-4 CAPLUS  
 CN Pyrazinecarboxamide, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



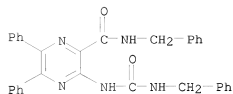
RN 856846-54-3 CAPLUS  
 CN Piperidine, 1-(3-amino-5,6-diphenylpyrazinoyl)- (5CI) (CA INDEX NAME)



RN 857180-39-3 CAPLUS  
 CN Pyrazinamide, N-benzyl-3-(3-benzylureido)-5,6-diphenyl-, compd. with EtOH (5CI) (CA INDEX NAME)

CM 1

CRN 7509-58-2  
 CMF C32 H27 N5 O2



CM 2

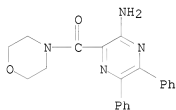
CRN 64-17-5

CMF C2 H6 O



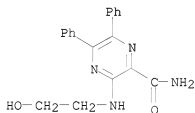
RN 857183-30-3 CAPLUS

CN Pyrazine, 2-amino-3-morpholinocarbonyl-5,6-diphenyl- (5CI) (CA INDEX NAME)



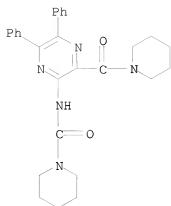
RN 857183-65-4 CAPLUS

CN Pyrazinamide, 3-(2-hydroxyethylamino)-5,6-diphenyl- (5CI) (CA INDEX NAME)



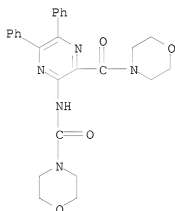
RN 857184-12-4 CAPLUS

CN Pyrazine, 2-(1-piperidinecarboxamido)-3-piperidinocarbonyl-5,6-diphenyl- (5CI) (CA INDEX NAME)



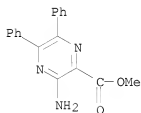
RN 857184-21-5 CAPLUS

CN Pyrazine, 2-(4-morpholinocarbonyl)-3-morpholinocarbonyl-5,6-diphenyl-  
(5CI) (CA INDEX NAME)



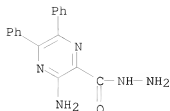
RN 857984-45-3 CAPLUS

CN Pyrazinoic acid, 3-amino-5,6-diphenyl-, methyl ester (5CI) (CA INDEX  
NAME)



RN 857984-47-5 CAPLUS

CN Pyrazinoic acid, 3-amino-5,6-diphenyl-, hydrazide (5CI) (CA INDEX NAME)



L14 ANSWER 375 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1954:904 CAPLUS

DOCUMENT NUMBER: 48:904

ORIGINAL REFERENCE NO.: 48:176d-i,177a-i,178a-c

TITLE: Investigations of as-triazines. I

AUTHOR(S): Rossi, Silvano

CORPORATE SOURCE: Univ. Milan, Italy

SOURCE: Gazzetta Chimica Italiana (1953), 83, 133-43

CODEN: GCITA9; ISSN: 0016-5603

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 48:904

GI For diagram(s), see printed CA Issue.

AB A new series of derivs. of 1,2,4-triazine (I) was prepared, many of which

have interesting pharmacol. properties. The I derivs. were formed from

the semicarbazones and thiosemicarbazones of R'COCOR'' (II) compds. by

loss of H<sub>2</sub>O and cyclization, i.e., R'C(COR'') :NNHCXNH<sub>2</sub> (III) →

N:CR'.CR'':N.CX.NH .dblarw. N:CR'.CR'':N.CXH:N, where X is O or S.

Closing of III to form a ring occurs only in hot alkaline medium. The

R'C(COR'') :NNHCXNH<sub>2</sub> compds. were prepared in 2 ways: (1) reaction of an

R'COCO<sub>2</sub>H or R'COCHO with H<sub>2</sub>NNHCXNH<sub>2</sub> (IV), and (2) an adaptation of the

synthesis of Wolff and Lindenbary [Ber. 36, 4127(1903)], i.e.,

ROClCH<sub>2</sub>NH<sub>2</sub> → RCOCHN<sub>2</sub> KCN → ROCHN<sub>2</sub>. (V) H<sub>2</sub>S →

RCOCH:NNHCXNH<sub>2</sub> (VI). When R in V is aromatic, the compds. are intense

yellow and are relatively insol.; when R is aliphatic or alicyclic, they

are very soluble and can be converted to VI compds. by treatment of their

aqueous

solns. with H<sub>2</sub>S. The reaction between II and IV (using excess II to avoid

formation of the disubstituted derivative) gives high yields in aqueous

solution The

semicarbazones and thiosemicarbazones of α-keto acids and

α-diketones were prepared analogously. N:CR'.CR'':N.CS.NH can be

converted into N:CR'.CR'':N.CO.NH compds. by several procedures; the

highest yields were obtained by KMnO<sub>4</sub> oxidation, and in some cases this

method is necessary; e.g. HO<sub>2</sub>CCMe:NNHCXNH<sub>2</sub> could not be cyclized.

α-Acetylthiophene (6 g.) in 10 cc. anhydrous EtOH and 6 g. SeO<sub>2</sub>,

refluxed 7 hrs., filtered cold, distilled, and the residue fractionated in

vacuo, yield 2.5 g. of α-thienylglyoxal (VII), light yellow oil, b<sub>15</sub>

66-74°. VII (1 mole) in a min. amount of water and IV in water

containing a little AcOH give a red solution, which, allowed to stand several

hrs. and the precipitate purified by MeOH, yields the thiosemicarbazone,

C<sub>7</sub>H<sub>7</sub>ON<sub>3</sub>S<sub>2</sub> (VIII), of VII, yellow, m. 176.5° (decomposition). VIII (1

mole) and 1.5 moles aqueous K<sub>2</sub>CO<sub>3</sub>, heated until solution is complete (the color

changes from yellow to brown-red), filtered with animal C (IX), acidified

with HCl, and the precipitate purified by EtOH, yield 76% of 3-mercapto-5-

(α-thienyl)-as-triazine, m. 234°. A suspension of

β-naphthylglyoxal thiosemicarbazone in aqueous K<sub>2</sub>CO<sub>3</sub>, boiled until solution

is complete, acidified, and the precipitate purified by EtOH, yields

3-mercapto-5-(β-naphthyl)-as-triazine, orange, m. 234-5°.

p-Biphenylglyoxal (2.5 g.) dissolved in 300 cc. hot 10% aqueous NaOH (dark

red solution) and allowed to stand ppts. the Na salt, which, treated with IX and water and acidified with HCl, gives after purification by BuOAc, 3-mercapto-5-(p-biphenyl)-as-triazine, yellow, sinters 215°, m. 233-4°. p-HOC6H4COCHO (15 g.), dissolved in hot water with IX, filtered, the stoichiometric weight of IV in boiling water containing a little AcOH added, boiled, and the precipitate purified by dilute MeOH, yields p-hydroxyphenylglyoxal thiosemicarbazone (X), orange-yellow, m. 111°. X in aqueous Na2CO3, boiled 15 min., filtered with IX, acidified with AcOH, and the precipitate purified by dilute MeOH or AcOH, yields 3-mercapto-5-p-hydroxyphenyl-as-triazine, orange, m. 243-4° (decomposition). MeBzC:NNHCONH2 (1 g.) and 1 g. KOH in 20 cc. water, refluxed 1 hr., diluted, acidified with HCl, and the precipitate crystallized from water, yield 0.5 g. of 3-hydroxy-5-phenyl-6-methyl-as-triazine, m. 192-4°. Alc. AcBz (5 g.) and 4 g. IV in a min. of water give a precipitate, which, purified by EtOH, yields 5.5 g. of BzAc thiosemicarbazone (XI), m. 172°. XI (1 g.) and 1.5 g. K2CO3 in 60 cc. water, refluxed 1 hr., filtered, acidified dropwise with dilute HCl, the precipitate dissolved in MeOH, 10 vols. water added, and concentrated, yield 0.75 g. of 3-mercapto-5-phenyl-6-methyl-as-triazine, m. 172°. Alc. EtCOBz and 1 mole IV in a min. of water containing AcOH, boiled several min., allowed to stand, and the precipitate purified by dilute EtOH, yield ethylphenylglyoxal thiosemicarbazone (XII), pale yellow, m. 125°. XII and 10% aqueous NaOH, boiled 5 min., acidified, and the precipitate purified by EtOH, yield 3-mercapto-5-phenyl-6-ethyl-as-triazine, orange, m. 175°. Boiling aqueous-alc. Ph2CHCOCO2H, 1.1 mole H2NNHCONH2.HCl, and 1 mole AcONa give a precipitate, which, purified by 50% EtOH, yields 80% of diphenylpyruvic acid semicarbazone (XIII), pale yellow, m. 200° (decomposition). A suspension of 2 g. XIII in 20 cc. 10% aqueous NaOH, boiled 10 min., allowed to stand until the Na salt is completely precipitated; this, dissolved in water, acidified with AcOH, and the precipitate purified by 50% EtOH, yields 3,5-dihydroxy-6-benzhydryl-as-triazine, lustrous, m. 236-7°. C5H11COCl (15 g.) in 30 cc. Et2O, added slowly at 0-5° to CH2N2 (from 40 g. nitrosomethylurea) in Et2O, allowed to stand overnight, the Et2O eliminated on a steam bath and in vacuo, the residue dissolved in anhydrous EtOH, 1 mole concentrated aqueous KCN added, most of the EtOH distilled in vacuo, water added, the mixture washed with Et2O, filtered with IX, the filtrate saturated with H2S, and the precipitate purified by aqueous EtOH, yields amylglyoxal thiosemicarbazone, C8H15OSN3 (XIV), pale yellow, m. 93-4°; with p-O2NC6H4NNH2 (XV) gives a brick-red precipitate XIV and aqueous K2CO3, heated 10 min. on a steam bath (red solution), acidified with AcOH, and the precipitate purified by dilute EtOH, yield 3-mercapto-5-amyl-as-triazine, m. 97°, does not react with XV. 1-Phenyl-3-diazoacetone (8 g.) in a min. of EtOH and saturated aqueous KCN (50% in excess of calculated), allowed to stand 1 hr., concentrated in vacuo, the K salt dissolved in a min. of water, washed with Et2O, treated with H2S, and the precipitate purified by EtOH, yield 70% of phenylglyoxal thiosemicarbazone (XVI), m. 162.5-3.5° (decomposition). A suspension of XVI in aqueous K2CO3, heated 15 min. on a steam bath, neutralized with AcOH, filtered with IX, acidified with HCl and the precipitate purified by EtOH, yields 3-mercapto-5-benzyl-as-triazine, light yellow, m. 169-70°. The mixture of 3-methyl-5-isoxazole- and 5-methyl-3-isoxazolecarboxylic acids described by Claisen (C.A. 3, 889), heated with PC15 90 min. on a steam bath, the POCl3 eliminated in vacuo, and the residue rectified in vacuo, yields 3-methyl-5-isoxazolecarbonyl



chloride (XVII), m. 37°; anilide, m. 155°. XVII in anhydrous Et2O, added dropwise to 50% excess CH2N2 in Et2O, allowed to stand 3 hrs., the Et2O and CH2N2 eliminated by distillation, and the residue purified by CHCl3-petr. ether, yields 3-methyl-5-diazoacetylisoxazole (XVIII), m. 110°. XVIII (7 g.) in MeOH and 40% excess saturated aqueous KCN, allowed to stand, the precipitated golden yellow K salt of azoformonitrile, O.N:CMc.CH:CCOCHN2.KCN, washed with Et2O, 5 g. in 100 cc. water saturated with H2S, 1 cc. dilute AcOH added, treated again with H2S, and the product purified by MeOH or EtOH, yield 100% of (3-methyl-5-isoxazolyl)glyoxal thiosemicarbazone (XIX), m. 183-4° (decomposition). A suspension of XIX in aqueous K2CO3, boiled several min. (red solution), allowed to stand, HCl added, and the precipitated purified by EtOH, yields 91% of 3-mercapto-5-(3-methyl-5-isoxazolyl)-as-triazine, m. 188-9°. Cyclohexanecarbonyl chloride (15 g.) in anhydrous Et2O, added dropwise to 50% excess ice cold CH2N2 in Et2O, allowed to stand 1 hr. (until no more N is evolved), the Et2O and excess CH2N2 eliminated, the oil residue (13 g.) treated as before with KCN (no salt seps.), the solution evaporated to dryness in vacuo,

the brown-yellow oil dissolved in water, washed with Et2O, the aqueous solution freed

of traces of Et2O in vacuo, treated with H2S, allowed to stand a long time, and the precipitate purified by dilute EtOH, yields cyclohexylglyoxal thiosemicarbazone (XX), yellow, m. 171° (decomposition). A suspension of XX in aqueous K2CO3, refluxed 30 min., acidified, and the precipitate purified by

MeOH, yields 3-mercapto-5-cyclohexyl-as-triazine, yellow, m. 225°. Aqueous KMnO4 (5%) added slowly to 5-hydroxy-3-mercapto-6-methyl-as-triazine (Bougault and Daniel, C.A. 22, 2751) in dilute NaOH until permanently colored, the mixture heated 15 min. on a steam bath, excess KMnO4 eliminated with EtOH, filtered, the filtrate concentrated to a small volume, acidified

with HCl (SO2 is evolved), evaporated to dryness, the residue extracted with EtOAc, the

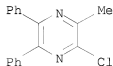
extract concentrated, and the precipitate purified by BuOAc, yields 98-9% of 3,5-dihydroxy-6-methyl-as-triazine, m. 209°. This method of preparation is easier and gives a higher yield than the method of Bougault (loc. cit.) or earlier workers. The compds. prepared by Gianturco (Gazz. chim. ital. 82, 595(1952)) from 3-mercaptotriazines by KMnO4 oxidation and reported as 3-sulfonic derivs. of I are the corresponding 3-hydroxytriazines, as was proved by R. by repeating the expts. of G. and comparing the products with those obtained by the semicarbazone method of the present work. The method of prepared hydroxytriazines by KMnO4 oxidation of the corresponding SH derivs. is, therefore, of general application.

IT 93764-53-5P, Pyrazine, 2-chloro-3-methyl-5,6-diphenyl-  
RL: PREP (Preparation)

(preparation of)

RN 93764-53-5 CAPLUS

CN Pyrazine, 2-chloro-3-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



TITLE: The preparation of hydroxypyrazines and derived chloropyrazines

AUTHOR(S): Karmas, Geo.; Spoerri, Paul E.

CORPORATE SOURCE: Polytech. Inst. of Brooklyn, Brooklyn, NY

SOURCE: Journal of the American Chemical Society (1952), 74, 1580-4  
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

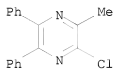
AB Hydroxypyrazines can be synthesized from  $\alpha$ -dicarbonyl compds. and hydrohalides of amino acid amides (cf. Jones, C.A. 43, 3009e).  $\alpha$ -Bromovaleric and  $\alpha$ -bromoisovaleric acids, refluxed 7 hrs. with 50% excess  $\text{SOCl}_2$  yielded 75-80% acid chlorides, b<sub>60</sub> 93-5° and b<sub>53</sub> 84-5, resp. The acid chlorides added dropwise to 28%  $\text{NH}_4\text{OH}$  at -30° yielded the amides. The starting material added to 28%  $\text{NH}_4\text{OH}$  saturated with  $\text{NH}_3$  at 0°, yielded the following  $\alpha$ -amino acid amide hydrohalides, starting material, product, % yield, and highest m.p. given:  $\text{ClCH}_2\text{CONH}_2$ , glycine amide-HCl, 85, 203-5°;  $\text{MeCHClCO}_2\text{Et}$ , alanine amide-HCl, 60, 172-3°;  $\text{MeCHBrCO}_2\text{Et}$ , alanine amide-HBr, 85, 156-60°;  $\text{EtCHBrCO}_2\text{Et}$ ,  $\alpha$ -aminobutyramide-HBr (I), 90, 190-2°;  $\text{PrCHBrCONH}_2$ , norvaline amide-HBr, 76, 218-19°;  $\alpha$ -bromoisovaleramide, valine amide-HBr, 70, 233-5°. Condensation of the amides with  $\alpha$ -dicarbonyl compds. yielded hydroxypyrazines (R1, R2, R3, % yield, and m.p. given): H, H, H, 51, 188-90°; H, H, Me, 8, 250-1°; H, Me, H, 27, 126-8°; Me, H, H, 85, 151-2°; H, Me, Me, 30, 201-2°; Me, H, Me, 25, 210-11°; Me, Me, H, 70, 146-7°; Me, Me, Me, 70, 204-5°; Et, H, H, 82, 96-7°; Et, Me, H, 32, 99-100°; Et, Me, Me, 60, 149-50°; Pr, H, H, 80, 79-80°; Pr, Me, H, 60, 75-6°; Pr, Me, Me, 64, 119-20°, iso-Pr, H, H, 46, 76-7°; iso-Pr, Me, H, 30, 91-2°; iso-Pr, Me, Me, 23, 144-5°; H, Ph, Ph, 69, 243-4°; Me, Ph, Ph, 47, 213-14°; Et, Ph, Ph, 46, 207-8°; Pr, Ph, Ph, 60, 205-6°; iso-Pr, Ph, Ph, 47, 234-5°. I with methylglyoxal yielded 4% 2-hydroxy-3-ethyl-6-methylpyrazine, m. 181-2°; Ag salt insol.  $\text{POCl}_3$  (15 cc.) containing 1 drop  $\text{H}_2\text{SO}_4$  and 0.04 mole of the hydroxy compound refluxed, cooled, the mixture poured into 200 g. ice and 100 cc.  $\text{Et}_2\text{O}$ , the mixture neutralized with 28%  $\text{NH}_4\text{OH}$ , made strongly alkaline with  $\text{NaOH}$  and extracted with  $\text{Et}_2\text{O}$  yielded the chloropyrazines. 2-Chloro-5-methylpyrazine (0.3 g.) and 9 cc. 28%  $\text{NH}_4\text{OH}$  heated sealed 20 hrs. at 200°, the solution saturated with  $\text{NaOH}$ , and extracted with  $\text{Et}_2\text{O}$  yielded 2-amino-5-methylpyrazine, m. 117.5-18°. The 6-Me isomer m. 127-8°. 2-chloropyrazines; R1, R2, R3, % Yield, B.p. °C./mm., M.p.(°C.) or ntD, t °C.; H, H, H, 65, 62-3/31, 1.5342, 25; H, H, Me, 69, 84-5/40, 50-1, ; H, Me, H, 30, 94-6/60, . . , ; Me, H, H, 65, 94-6/65, 1.5302, 25; H, Me, Me, 60, 86-8/20, 1.5290, 23; Me, H, Me, 26, 112-13/70, 1.5243, 26; Me, H, 67, 111-12/70, 1.5230, 24; Me, Me, Me, 75, 100-1/25, 56-7, ; Et, H, H, 75, 110-11/72, 1.5244, 22; Et, Me, H, 32, 93-4/20, 1.5186, 23; Et, Me, Me, 50, 106-7/20, 1.5205, 25; Pr, H, H, 53, 124-5/65, 1.5144, 24; Pr, Me, H, 77, 106-7/20, 1.5130, 22; Pr, Me, Me, 36, 121-2/20, 1.5147, 24; iso-Pr, H, H, 60, 112-13/65, 1.5104, 25; iso-Pr, Me, H, 76, 95-6/18, 1.5092, 25; iso-Pr, Me, Me, 65, 105-6/15, 1.5120, 25; H, Ph, Ph, 70, 140-5/0.001, 126-7, ; Me, Ph, Ph, 84, 140-50/0.001, 136-7, ; Et, Ph, Ph, 85, 145-50/0.001, 77-8, ; Pr, Ph, Ph, 97, 155-60/0.001, . . , ; iso-Pr, Ph, Ph, 75, 155-60/0.001, 96-7

IT 93764-53-5P, Pyrazine, 2-chloro-3-methyl-5,6-diphenyl-  
104369-40-6P, Pyrazinol, 5,6-diphenyl-3-propyl-  
108981-53-9P, Pyrazinol, 3-methyl-5,6-diphenyl-  
120106-61-8P, Pyrazinol, 3-isopropyl-5,6-diphenyl-  
857222-93-6P, Pyrazine, 2-chloro-3-ethyl-5,6-diphenyl-

857984-35-1P, Pyrazine, 2-chloro-3-isopropyl-5,6-diphenyl-  
 857984-41-9P, Pyrazine, 2-chloro-5,6-diphenyl-3-propyl-  
 RL: PREP (Preparation)  
 (preparation of)

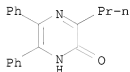
RN 93764-53-5 CAPLUS

CN Pyrazine, 2-chloro-3-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



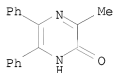
RN 104369-40-6 CAPLUS

CN 2(1H)-Pyrazinone, 5,6-diphenyl-3-propyl- (CA INDEX NAME)



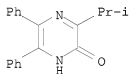
RN 108981-53-9 CAPLUS

CN 2(1H)-Pyrazinone, 3-methyl-5,6-diphenyl- (CA INDEX NAME)



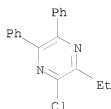
RN 120106-61-8 CAPLUS

CN 2(1H)-Pyrazinone, 3-(1-methylethyl)-5,6-diphenyl- (CA INDEX NAME)

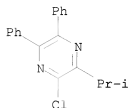


RN 857222-93-6 CAPLUS

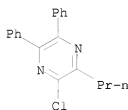
CN Pyrazine, 2-chloro-3-ethyl-5,6-diphenyl- (CA INDEX NAME)



RN 857984-35-1 CAPLUS  
CN Pyrazine, 2-chloro-3-isopropyl-5,6-diphenyl- (5CI) (CA INDEX NAME)



RN 857984-41-9 CAPLUS  
CN Pyrazine, 2-chloro-5,6-diphenyl-3-propyl- (CA INDEX NAME)



L14 ANSWER 377 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1954:880 CAPLUS

DOCUMENT NUMBER: 48:880

ORIGINAL REFERENCE NO.: 48:164b-e

TITLE: Reactions of 3-thiocyanato-2-butanone. I. The preparation of 2-substituted-4,5-dimethylthiazoles  
Gregory, James T.; Mathes, Roger A.

AUTHOR(S):  
CORPORATE SOURCE: B. F. Goodrich Research Center, Brecksville, O.  
SOURCE: Journal of the American Chemical Society (1952), 74, 1719-20

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 48:880

AB cf. C.A. 47, 12355h. 3-Thiocyanato-2-butanone (I) reacts with water, HCl, H<sub>2</sub>S, NH<sub>4</sub>Cl, HSC(:NH)SNH<sub>4</sub> (II), and HSC(:NH)NH<sub>2</sub> (III) to yield 2-substituted 4,5-dimethylthiazoles. MeCHClAc (319.5 g.) added dropwise during 3 h. to 284 g. NaSCN in 600 cc. water at 80° yielded 326 g. I, b.p. 58-9°, n<sub>D</sub>20 1.4836, d<sub>20</sub> 1.1152, d<sub>15</sub> 1.1195, MRD 33.07, calculated 32.60. I (65 g.) in 200 cc. EtOH heated with H<sub>2</sub>S at 78° (internal pressure drops from 2700 to 2100 lb./sq. in.), the mixture concentrated and the residue diluted with hexane yielded 38 g. 2-mercapto-4,5-dimethylthiazole (IV), m. 161-5° (all m.ps. uncor.). I (12.9 g.), 15.2 g. III, 200 cc. water, 50 cc. EtOH, and 42 cc. HCl refluxed 10 h. and the product filtered yielded 9.3 g. IV, m. 161.5-4.5°. II (24 g. in water) added to 25.8 g. I, 18.2 cc. HCl, and 100 cc. water during 1 h. at 8-10° yielded 16 g. IV, m. 160-2°. I (12.9 g.) in 150 cc. water and 3.5 cc. HCl refluxed 11.5 h. yielded 9.2 g. 2-hydroxy-4,5-dimethylthiazole, m. 143-5°. I (129 g.) treated during 1 h. with 95 g. HCl at 20-30°, the slurry dissolved in 350 cc. water, the solution extracted with Et<sub>2</sub>O, and the extract concentrated yielded 96 g.

2-chloro-4,5-dimethylthiazole, b3 49-53°, n20D 1.5307, d20 1.233, MRD 36.92 (calculated), 37.02 found. NH4Cl (107 g.), 32.25 g. I, 200 cc. water, and 100 cc. EtOH refluxed 5.5 h. yielded 41 g. 2-amino-4,5-dimethylthiazole-HCl, m. 262-3° (decomposition).

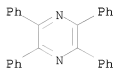
IT 642-04-6P, Pyrazine, tetraphenyl-

RL: PREP (Preparation)

(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 378 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1954:879 CAPLUS

DOCUMENT NUMBER: 48:879

ORIGINAL REFERENCE NO.: 48:163i,164a-b

TITLE: Opening of the tetraphenylpyrrole ring

AUTHOR(S): Kuhn, Richard; Kainer, Helmut

CORPORATE SOURCE: Max-Planck Inst., Heidelberg, Germany

SOURCE: Ann. (1952), 578, 227-31

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 48:879

GI For diagram(s), see printed CA Issue.

AB cf. preceding abstract. To 3.7 g. tetraphenylpyrrole (I) in 150 cc. glacial AcOH at 80° was added a saturated aqueous solution of 4 g. NaNO2 giving 1.7 g. cis-BzCPh:CPhBz (II), m. 212-13°. When the reaction (with 2.4 g. NaNO2) was carried out at about 0°, and the filtered mixture poured into cold H2O, 1.4 g. of a compound C28H21ON (III), m. 171-3° (from CHCl3MeOH), was obtained. Three possible structures for III are proposed, of which the most probable is HN:CPh:CPhBz (IIia), possibly in equilibrium with N:CPh:CPh:CPhOH. An improved Van Slyke determination gave 0.96 mole N, thus supporting IIIa. Cold AmNO2 and I

gave

III in high yield; when the reaction mixture was warmed II was formed. III (0.23 g.) in 20 cc. dioxane with 5 cc. H2SO4 and 5 cc. H2O gave 60 mg. II (the NH4 salts accounting for 1/3 of the original N). III in hot AcOH with NaNO2 gave 55% II. III with Zn and hot AcOH gave I (also formed by warming III in AcOH with 57% HI). II (400 mg.) heated 20 hrs. at 200° with 2.5 cc. NH4OH and 2.5 cc. dioxane in a bomb tube gave 50 mg. II, m. 248-9° (from AcOH).

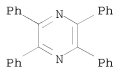
IT 642-04-6P, Pyrazine, tetraphenyl-

RL: PREP (Preparation)

(preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



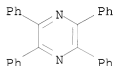
L14 ANSWER 379 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1954:878 CAPLUS  
 DOCUMENT NUMBER: 48:878  
 ORIGINAL REFERENCE NO.: 48:163h-i  
 TITLE: Widening of the tetraphenylpyrrole ring  
 AUTHOR(S): Kuhn, Richard; Kainer, Helmuth  
 CORPORATE SOURCE: Max-Planck Inst., Heidelberg, Germany  
 SOURCE: Ann. (1952), 578, 226-7  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 OTHER SOURCE(S): CASREACT 48:878

AB Dropwise addition of 4.5 g. Pb(OAc)<sub>4</sub> in 50 cc. CHCl<sub>3</sub> to 3.7 g. tetraphenylpyrrole (I) in 100 cc. dry CHCl<sub>3</sub> and 20 g. K<sub>2</sub>CO<sub>3</sub> gave 0.72 g. tetraphenylpyrazine (II), m. 248-9°, identical with Davidson's amarone (C.A. 33, 1724.1). II was also prepared in low yield by refluxing I with PbO<sub>2</sub> in CHCl<sub>3</sub>, or by suspending I in 3% BzO<sub>2</sub>H. As shown by D., II with AcOH and Zn, is reconverted into I.

IT 642-04-6P, Pyrazine, tetraphenyl-  
 RL: PREP (Preparation)  
 (preparation of)

RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



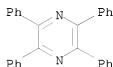
L14 ANSWER 380 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1954:877 CAPLUS  
 DOCUMENT NUMBER: 48:877  
 ORIGINAL REFERENCE NO.: 48:163d-h  
 TITLE: Synthesis of indole-3-aldehydes. Reaction of hexamethylenetetramine with some Mannich bases  
 AUTHOR(S): Snyder, H. R.; Swaminthan, Sambasiva; Sims, Homer  
 CORPORATE SOURCE: Univ. of Illinois, Urbana  
 SOURCE: Journal of the American Chemical Society (1952), 74, 5110-13  
 CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 OTHER SOURCE(S): CASREACT 48:877

AB Interaction of 3-(dimethylaminomethyl)indole (I) with (CH<sub>2</sub>)<sub>6</sub>N<sub>4</sub> (II) in HOAc or dilute EtCO<sub>2</sub>H gives 3-indolecarboxaldehyde (III). The reaction is applicable to Mannich bases (IV) of substituted indoles. Poorer yields are obtained from phenolic IV while IV derived from ketones apparently do not react successfully. The  $\alpha$ -substituent has an effect on the course of the reaction since 2-carbethoxy-3-indolecarboxaldehyde (V) and the 2-Ph derivative (VI) of III are obtained in 60-70% and 70-80% yields respectively while the 2-Me derivative (VII) of III is obtained in trace yields. The aldehydes apparently are formed by the Sommelet reaction since PhCH<sub>2</sub>N+(CH<sub>2</sub>)<sub>6</sub>N<sub>3</sub>Cl<sup>-</sup> is formed from PhCH<sub>2</sub>N+PhMe<sub>2</sub>Cl<sup>-</sup> (VIII) and II because steam distillation of VIII and II gives a 50% yield of BzH. The IV of Me<sub>2</sub>CHNO<sub>2</sub> is unaffected. Addition of II to quaternary salts of ketonic IV only aids in amine elimination. II (5.2 g.) are added to a solution of 4.2 g. III in 16 ml. HOAc. When the amine is dissolved, the mixture is rapidly heated and refluxed exactly 5 min. rapidly cooled, poured into 100 ml. H<sub>2</sub>O

and chilled 24 hrs. to give 2.1 g. of crude III. Recrystn. gives 1.1 g. (25.1%) pure III, m. 190-3°; oxime, m. 196-7° (a mixture of the oxime and the aldehyde begins to melt at 165°). The same reaction in 66% HOAc, EtCO<sub>2</sub>H, and PrCO<sub>2</sub>H gives 39-47%, 47-53%, and 20% of III, resp. Indole fails to give any aldehyde. PhCH<sub>2</sub>NMe<sub>2</sub> is recovered unchanged, with no signs of BzH. 2-(Dimethylaminomethyl)pyrrole gives no aldehyde. PhCOCH<sub>2</sub>CH<sub>2</sub>-NMe<sub>2</sub>.HCl gives no aldehyde in HOAc, dilute EtCO<sub>2</sub>H, or H<sub>2</sub>O but in CHCl<sub>3</sub> gives a compound m. 194-6° (II.HCl m. 189°). 2,1-HOC10H<sub>6</sub>CHO, m. 81-2°, is obtained in 32% yield from the IV of 2-C10H<sub>7</sub>OH, in HOAc; in 66% EtCO<sub>2</sub>H in 20% yield. VIII and II, in H<sub>2</sub>O, gives 47% BzH while in CHCl<sub>3</sub> gives 51% C13H19N4Cl.

IT 642-04-6P, Pyrazine, tetraphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 381 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1953:54875 CAPLUS  
 DOCUMENT NUMBER: 47:54875  
 ORIGINAL REFERENCE NO.: 47:9321d-g  
 TITLE: Action of urea on benzoin in the presence of formic acid  
 AUTHOR(S): Novelli, Armando  
 CORPORATE SOURCE: Catedra quim. org. ciclica, Buenos Aires, Argent..  
 SOURCE: Anales de la Asociacion Quimica Argentina (1921-2001) (1952), 40, 112-14  
 CODEN: AAQAAE; ISSN: 0365-0375

DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB 4,5-Diarylimidazoles and tetraarylpyrazine can be obtained by heating benzoin with urea and HCO<sub>2</sub>H. Thus, a mixture of 12 g. urea, 10.5 g. benzoin, and 10.8 g. 85% HCO<sub>2</sub>H in a fractional distillation flask is heated 3 hrs. at 180-5° in an oil bath, then cooled to about 160°, the oil poured into water, the mixture stirred vigorously to dissolve the gummy precipitate which forms at first, the powder filtered, washed with water, then suspended in 200 ml. 5% HCl, heated to 80-90°, filtered hot, and the acid filtrate treated with an excess of NH<sub>3</sub> to form a white precipitate of 7 g. (65%) 4,5-diphenylimidazole, m. 229-30°. The precipitate formed from the HCl treatment is dried, extracted with C<sub>6</sub>H<sub>6</sub>, and the C<sub>6</sub>H<sub>6</sub> solution concentrated and treated with an excess of petr. ether to form 0.30 g. tetraphenylpyrazine, m. 246-7°. The portion of the precipitate which was insol. is recrystd. from dilute AcOH or alc. to form 2 g. 4,5-diphenyl-2(3H)-imidazolone, m. 322-4°, iridescent crystals, showing a blue fluorescence in alc. solution Other new compds. similarly obtained are 4,5-bis(p-methoxyphenyl)-2(3H)-imidazolone, m. 278-80°; 4,5-bis(3,4-methylenedioxyphenyl)-2(3H)-imidazolone, m. 201-3°; tetrakis(3,4-methylenedioxyphenyl)pyrazine, yellow, m. 230-1°, giving an intense green color in H<sub>2</sub>SO<sub>4</sub>; and 4,5-bis-(methylenedioxyphenyl)-2(3H)-imidazolone, m. 291°.

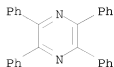
IT 642-04-6P, Pyrazine, tetraphenyl- 21885-49-4P, Pyrazine, tetrakis(p-methoxyphenyl)- 491858-22-1P, Pyrazine, tetrakis(3,4-methylenedioxyphenyl)-

RL: PREP (Preparation)

(preparation of)

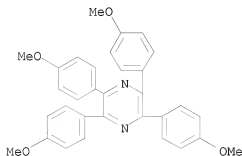
RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



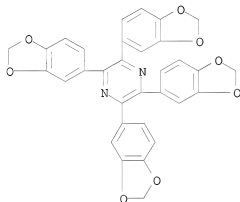
RN 21885-49-4 CAPLUS

CN Pyrazine, tetrakis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



RN 491858-22-1 CAPLUS

CN Pyrazine, tetrakis(1,3-benzodioxol-5-yl)- (9CI) (CA INDEX NAME)



L14 ANSWER 382 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1949:34160 CAPLUS

DOCUMENT NUMBER: 43:34160

ORIGINAL REFERENCE NO.: 43:6182b-f

TITLE: Condensation of aldehydes with amides. XVII. 5-Chloro- and 3,5-dichlorosalicylaldehydes  
AUTHOR(S): Ghulam, Ram; Nigam, Singh; Pandya, Kantilal C.  
SOURCE: Proceedings - Indian Academy of Sciences, Section A (1949), 29A, 56-63

CODEN: PISAA7; ISSN: 0370-0089

DOCUMENT TYPE:

Journal



LANGUAGE: Unavailable

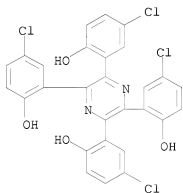
GI For diagram(s), see printed CA Issue.

AB cf. C.A. 41, 3774f. A continuation of previous studies has shown that monoamides are obtained from heptanamide,  $\text{BzNH}_2$ , and  $\text{PhSO}_2\text{NH}_2$  (I) with 5,2-Cl(HO)C $_6$ H $_3$ CHO (II) and from I with 3,5,2-Cl $_2$ (HO)C $_6$ H $_2$ CHO (III); all other combinations studied gave bisamides. The yields from III were usually higher than from II. The following N-(5-chlorosalicylidene) amides were obtained from II and the corresponding amides: bisacetamide 53%, m. 227°, white needles, by heating II 0.8 and AcNH $_2$  0.6 g. 8 hrs. at 98°. Bispropionamide, m. 188°, bisbutyramide m. 160°, monoheptanamide, decompose 268°, monobenzamide, decompose 269°, and bisbenzamide, m. 194° (by heating with C $_5$ H $_5$ N), monobenzenesulfonamide, m. 170°, biuret, m. 241° (decomposition), yellow, diurea, m. 226° (decomposition) (by heating below 140°), and the tetra(monochlorosalicyl)pyrazine (IV) (from formamide), m. 270°, yellow (cf. Bulow, Ber. 1893, 1972). The following N-(3,5-dichlorosalicylidene) amides were obtained from III and the corresponding amides: bisacetamide, m. 204.5°, bispropionamide, m. 195.5°, bisbutyramide, m. 179°, bisheptanamide, m. 268°, bisbenzamide, m. 202°, monobenzenesulfonamide m. 196°, biuret, m. 261°, diurea, m. 17° (at temps. below 140°), bisformamide, m. 207°, and tetra(3,5-dichlorosalicyl)pyrazine (V) (from formamide also) m. 227°.

IT 857992-91-7P, Pyrazine, tetrakis(5-chloro-2-hydroxyphenyl)-  
857992-93-9P, Pyrazine, tetrakis(3,5-dichloro-2-hydroxyphenyl)-  
RL: PREP (Preparation)  
(preparation of)

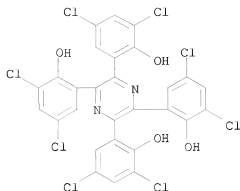
RN 857992-91-7 CAPLUS

CN Pyrazine, tetrakis(5-chloro-2-hydroxyphenyl)- (5CI) (CA INDEX NAME)



RN 857992-93-9 CAPLUS

CN Pyrazine, tetrakis(3,5-dichloro-2-hydroxyphenyl)- (5CI) (CA INDEX NAME)



L14 ANSWER 383 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1949:15234 CAPLUS

DOCUMENT NUMBER: 43:15234

ORIGINAL REFERENCE NO.: 43:3009e-1,3010a

TITLE: Pyrazines and related compounds. I. A new synthesis of hydroxypyrazines

AUTHOR(S): Jones, Reuben G.

SOURCE: Journal of the American Chemical Society (1949), 71, 78-81

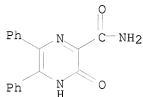
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB A general synthesis of 2-hydroxypyrazines (I) involves the condensation of 1,2-di-CO compds. with  $\alpha$ -amino acid amides.  $\text{H}_2\text{NCH}_2\text{CONH}_2$  and  $(\text{CHO})_2$  give 48% I, m. 187-9°. dl-Methionine Et ester (II) (287 g.) in 2 l. absolute EtOH, saturated at 0° with  $\text{NH}_3$  and kept 30 days, gives 175 g. (93% on basis of unrecovered II) dl-methioninamide (III), m. 48-9°.  $\alpha$ -Amino- $\alpha$ -phenylacetamide (IV), m. 128-9°.  $\text{H}_2\text{NCH}(\text{CONH}_2)_2$  (V) (117 g.), added to 25 g. 40% aqueous  $(\text{CHO})_2$  diluted with 25 mL  $\text{H}_2\text{O}$ , the mixture treated (temperature below 10°) with 10 mL 12.5 N NaOH and, after several hrs., with 10 mL AcOH, give 90% of the 3-carbamyl derivative of I, m. 265° (decomposition); a higher temperature or less  $(\text{CHO})_2$  gives a smaller yield; KOH or Et<sub>2</sub>NH can be used in place of NaOH. AcCHO (36 g.) in 50 mL  $\text{H}_2\text{O}$  at -20°, treated with 60 g. V and then (dropwise, temperature below 0°) with 40 mL 12.5 N NaOH, kept 18 h. at room temperature, and acidified with 50 mL 12 N HCl, gives 59% 2-hydroxy-3-carbamyl-5-methylpyrazine (VI), m. 243-4° (decomposition); Ac<sub>2</sub> gives 93% of the 5,6-di-Me analog (VII), m. 231-2° (decomposition). V (11.7 g.) and 21 g. Bz<sub>2</sub> in 350 mL 50% aqueous EtOH at 70°, treated with 10 mL 12.5 N NaOH, give 83% of 2-hydroxy-3-carbamyl-5,6-diphenylpyrazine, m. 174-5°; 5-Ph analog m. 213-16°, 75%. 3-Me derivative of I m. 140-2°, 83.7%; 3,5-di-Me derivative m. 145-6°, 42% from MeCH(NH<sub>2</sub>)CONH<sub>2</sub> and AcCHO; 3-methyl-5-Ph derivative m. 212-13°, 56.5%; 5,6-di-Ph derivative m. 225-7°, 97%; 5,6-di-Me derivative m. 199-200°, 11.3%. I and Ac<sub>2</sub> in CHCl<sub>3</sub> containing 1 equivalent piperidine give 70% (NaOH gives 88%) of the 3-(2-methylmercaptoethyl)-5,6-dimethyl derivative of I m. 128-9°; 3-(2-methylmercaptoethyl) derivative of I m. 96-7°, 97%. 3-Ph derivative of I m. 172-3°, 88.5%; 3-phenyl-5,6-dimethyl derivative of I m. 222-6°, 45%. p-HOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>CH(NH<sub>2</sub>)CONH<sub>2</sub> and  $(\text{CHO})_2$  give 76% of the 3-(p-hydroxybenzyl) derivative of I, m. 212-13°; AcCHO gives 47% of the 3-(p-hydroxybenzyl)-5-Me derivative, m. 202-3°; Ac<sub>2</sub> gives 77.5% of the 3-p-hydroxybenzyl-5,6-dimethyl derivative, m. 236-7°. VII (11.5 g.) in 75 mL 3 N NaOH, heated several hrs. on the steam bath, gives 79% 2-hydroxy-5,6-dimethyl-3-pyrazinoic acid, m. 172-4° (decomposition); VI

gives 30% of the 5-Me analog, m. 155-7° (decomposition); the 6-Me isomer, tan, m. 183-4° (decomposition).  
 IT 34121-79-4P, Pyrazinamide, 3-hydroxy-5,6-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 34121-79-4 CAPLUS  
 CN Pyrazinecarboxamide, 3,4-dihydro-3-oxo-5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 384 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1945:19066 CAPLUS

DOCUMENT NUMBER: 39:19066

ORIGINAL REFERENCE NO.: 39:3001b-i,3002a-c

TITLE: New aminopyrazines and their sulfanilamide derivatives

AUTHOR(S): Weijlard, John; Tishler, Max; Erickson, A. E.

SOURCE: Journal of the American Chemical Society (1945), 67, 802-6

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

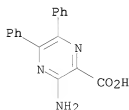
OTHER SOURCE(S): CASREACT 39:19066

GI For diagram(s), see printed CA Issue.

AB The therapeutic importance of 2-sulfanilamidopyrazine (sulfapyrazine) indicates the necessity for the study of the substituted pyrazinesulfonamides as effective chemotherapeutic agents. A simple and probably general method for preparing 5- and 6-alkyl or -aryl substituted aminopyrazines consists in heating the corresponding lumazines with H<sub>2</sub>SO<sub>4</sub>. (CHO)2.2NaHSO<sub>3</sub>.H<sub>2</sub>O (20 g.) in 400 cc. H<sub>2</sub>O, 20 cc. concentrated NH<sub>4</sub>OH and 10 g. 4,5-diamino-2,6-dihydroxypyrimidine (I), heated at 90° for 5 min. give 87% of lumazine, CR:N.C.NH.CO CR:N.C.CO.NH (II, R = H), m. (anhydrous) 348-9°. Ac<sub>2</sub> (15.6 g.) and 21.3 g. of I in 800 cc. H<sub>2</sub>O, boiled 15 min., give 68.7% of the 6,7-di-Me derivative (III) (II, R = Me), m. 350-1° (decomposition). I (14.2 g.), 21 g. Bz<sub>2</sub>, 1 l. H<sub>2</sub>O, 1 l. EtOH and 100 cc. NH<sub>4</sub>OH, heated 0.5 hr. at 85-90°, give 64.5% of the 6,7-di-Ph derivative (IV), m. 315-22°. I and the reaction product from isonitrosoacetone with H<sub>2</sub>SO<sub>4</sub> give 77.9% of the 6(or 7)-Me derivative (V). BzCHO (57 g.), added to 57 g. of I in 750 cc. H<sub>2</sub>O and 150 cc. NH<sub>4</sub>OH and the mixture refluxed 1 hr., gives 71% of the 6(or 7)-Ph derivative (VI), pale yellow, m. above 300°. II is very slowly attacked by alkali at 100-5°; at this temperature I in 20% NaOH is only slightly hydrolyzed in 5 hrs. but is converted in good yields to 2-amino-3-pyrazinecarboxylic acid (VII), m. 201°, in 72-96 hrs. The optimum yield (93.5%) of VII results when 20 g. II and 11 g. NaOH in 80 cc. H<sub>2</sub>O are heated for 2 hrs. at 170°. II (125 g.) and 122 g. NaOH in 600 cc. H<sub>2</sub>O, heated 24 hrs. at 170°, give 91% of 2-hydroxy-3-pyrazinecarboxylic acid (VIII), m. 218-20°; this results also in 81% yield on heating 2 g. of VII in 20 cc. 20% NaOH for 20 hrs. at 170°; FeCl<sub>3</sub> gives a wine-red color. V (18.7 g.) and 16 g. NaOH in 95 cc. H<sub>2</sub>O, heated at 170-2° for 20 hrs., give 31.4% of the 6-Me derivative (IX) of VII, m. 211-12°; III (2.7 g.) and 2.7 g. NaOH in 25 cc. H<sub>2</sub>O, heated for 20 hrs. at 170-5°, give 91.5% of the 5,6-di-Me derivative (X), of VII, m.

209-10° (decomposition); FeCl<sub>3</sub> gives a wine-red color; IV (3. g.) and 6 g. NaOH in 30 cc. H<sub>2</sub>O, refluxed for 35 hrs., and the crude Na salt transformed into the Ba salt, give 1.5 g. of the 5,6-di-Ph derivative (XI) of VII, m. 189° (decomposition); FeCl<sub>3</sub> gives a wine-red color. In each case the solution was adjusted to a pH of 2.5 to liberate the free acid. II (5 g., containing 12% H<sub>2</sub>O), added to 50 cc. preheated 100% H<sub>2</sub>SO<sub>4</sub> and the temperature held at 240-5° for 15 min., gives 79% of 2-aminopyrazine (XII), m. 118-20°; it results also in 82% yield on boiling 25 g. VII in 75 cc. carbitol acetate for 15 min. III (8 g.) and 120 cc. 80% H<sub>2</sub>SO<sub>4</sub>, refluxed at 195-200° for 75 min., give 18.9% of the 5,6-di-Me derivative of XII, m. 140-4°; this results in 93.7% yield by heating 2.15 g. of X in 20 cc. 80% H<sub>2</sub>SO<sub>4</sub> at 200° for 10 min. IV (15 g.) in 225 cc. 80% H<sub>2</sub>SO<sub>4</sub>, refluxed 10 min., give 21.9% of the 5,6-di-Ph derivative of XII, m. 227-8°; it results in 30% yield by refluxing 0.5 g. of XI and 10 cc. 80% H<sub>2</sub>SO<sub>4</sub> for 30 min. VI (4.8 g.) and 60 ml. 80% H<sub>2</sub>SO<sub>4</sub>, heated at 217-22° for 15 min., give 14.5% of the 5(or 6)-Ph derivative of XII, m. 130-1°. V (10 g.) and 200 cc. 80% H<sub>2</sub>SO<sub>4</sub>, refluxed 2 hrs., give 6.2% of the 6-Me derivative (XIII) of XII, yellow, m. 124-5°; it results in 76% yield from IX and 80% H<sub>2</sub>SO<sub>4</sub> at 180° for 10 min. The structure of XIII follows from the synthesis of the 5-Me isomer (XIV). 5-Methyl-2-pyrazinecarboxylic acid was esterified with MeOH and H<sub>2</sub>SO<sub>4</sub> and transformed into 89.2% of the amide, m. 210-11°; reaction with KOCl for 20 min. at 0° and 45 min. on the steam bath gives 67.8% of XIV, m. 116-18° (mixed m.p. of XIII and XIV, 62-70°). VIII (5 g.) and 15 cc. carbitol acetate, refluxed for 10 min. and the crude product extracted with C<sub>6</sub>H<sub>6</sub> for 5 hrs., give 2.5 g. of 2-hydroxypyrazine, brilliant yellow, m. 187-8°. The 5,6-di-Me derivative of XII (2 g.) in 25 cc. C<sub>5</sub>H<sub>5</sub>N, treated with 4.2 g. of p-AcNHC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>Cl at 5-10°, heated at 40-50° for 2 hrs. and allowed to stand at room temperature overnight, give 81.1% of the N<sub>4</sub>-Ac derivative, m. 233-4°, of 2-sulfanilamido-5,6-dimethylpyrazine (XIV), m. 261.5-2° (86.4% on hydrolysis of 4 g. of crude Ac derivative by boiling with 30 cc. EtOH and 15 cc. concentrated HCl for 1 hr.). 5,6-Di-Ph analog of XIV, m. 115°, 41% (N<sub>4</sub>-Ac derivative, m. 194.5-5°); 6-Me compound, m. 258-9°, 68% (N<sub>4</sub>-Ac derivative, m. 239-9.5°); 5-Me compound, m. 237.5-8.5°, 70% (N<sub>4</sub>-Ac derivative, m. 240-1°); 5(or 6)-Ph compound, m. 270-1°, 80% (N<sub>4</sub>-Ac derivative, m. 237-40°) (this series of m.ps. is corrected).

IT 854699-15-3P, Pyrazinoic acid, 3-amino-5,6-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 854699-15-3 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-5,6-diphenyl- (9CI) (CA INDEX NAME)



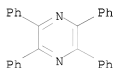
L14 ANSWER 385 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1943:3549 CAPLUS  
 DOCUMENT NUMBER: 37:3549  
 ORIGINAL REFERENCE NO.: 37:612e-i,613a-e  
 TITLE: Cyclobutane derivatives. I The degradation of cis- and trans-1,2-cyclobutanedicarboxylic acids to the

corresponding diamines  
 AUTHOR(S): Buchman, Edwin R.; Reims, Alf O.; Skei, Thurston;  
 Schlatter, Maurice J.  
 SOURCE: Journal of the American Chemical Society (1942), 64,  
 2696-700  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB Adipic acid (1460 g.), treated with 2380 g. of SOCl<sub>2</sub> (in lots of 750 g. at 2-3 hr. intervals) at 70-80° and then dropwise with 3520 g. of Br (18 hrs.) with continued heating (finally at 100° for 8 hrs.), the crude acid halide added with stirring to 2 l. MeOH (in an ice bath), gives 70% of di-Me meso- $\alpha,\alpha'$ -dibromoadipate (I), m. 73.5-4° (m. ps. corrected); the noncryst. distillate consists largely of the unstable racemic form, m. 11-12° (crystallized from MeOH at -78°); EtOH gives 46% of the di-Et ester. I (664 g.), 368 g. of KCN and 360 cc. MeOH, refluxed 56 hrs., give 82% of di-Me 1-cyano-1,2-cyclobutanedicarboxylate, b<sub>3</sub> 128°; the crystalline portion (II) (26%) m. 89.5-90° (from MeOH); the liquid portion (III) b<sub>2</sub> 119-20° and did not crystallize at 0°. II on hydrolysis by the method of Fuson and Kao (C. A. 23, 2424) gives 1,1,2-cyclobutanetricarboxylic acid, m. 91-2°, loses CO<sub>2</sub> at 130°; usually the acid seps. with H<sub>2</sub>O of crystallization (m. 135° (decomposition)), not lost on drying in vacuo under the usual conditions; the anhydrous acid was obtained in only 1 experiment Hydrolysis of 789 g. of III by refluxing with 2 l. of 6 N HCl for 24 hrs., decarboxylation of the crude acid at 170-80°/20 mm. for 3 hrs., refluxing the mixture with 2000 g. of AcCl for 3 hrs., and heating the residue at 150-60°/20 mm. for several hrs. and distillation at 2 mm., give 81% of the anhydride (IV), b<sub>2</sub> 127-30°, m. 76.5-7°, of cis-1,2-cyclobutanedicarboxylic acid (V); IV is converted to V (85%) by boiling with 0.8 its weight of H<sub>2</sub>O; V m. 139.5-40°. V is transformed into the trans-isomer (VI) by HCl; refluxing 50 g. of V at 200° for 5 hrs. gives 25.5 g. of VI, m. 130.5-31°; heating 20 g. of V with 0.3 g. Na in 5 cc. MeOH for 2.5 hrs. gives 16.3 g. of ester (b<sub>2</sub> 118-19°), which yields 76% of VI. V and CH<sub>2</sub>N<sub>2</sub> give 94% of the Me ester, b<sub>3</sub> 85°; refluxing 500 g. of V (IV can be used) in 2 l. absolute EtOH and treatment with HCl gas for 4 hrs. gives 71% of the Et ester, b<sub>2</sub> 99-100°, b<sub>2</sub> 123°. Dihydrazides (VII) were prepared by adding the ester dropwise to 10% of 85% N<sub>2</sub>H<sub>4</sub> at 130° and heating for 5 hrs.; no change in configuration occurred (hydrolysis to original acid); the cis-Me ester gives 80% of the cis-VII, prisms from absolute EtOH, m. 140-40.5°; occasionally a metastable form (needles, m. 134.5-5°) separated. On standing, cis-VII changed in composition and became insol. in H<sub>2</sub>O; 246 g. of cis-Et ester and 160 g. of 85% N<sub>2</sub>H<sub>4</sub> give 75% of cis-VII; trans-VII m. 223-3.5°; the latter is conveniently prepared from the mixed di-Et ester of crude V. The HCl salt of cis-VII, prepared by adding concentrated HCl at 0°, results in 55% yield and is easily altered; trans-VII-HCl m. 200° (decomposition); 95% yield. The HCl salt in H<sub>2</sub>O (covered with ether) and aqueous NaNO<sub>2</sub> at 13-16° give 55% of the cis-diurethan, m. 101.5-2°; the trans-isomer m. 129.5-30°. The urethans, refluxed with MeOH-KOH for 1 hr., give 77% of cis-1,2-diaminocyclobutane (VII), b<sub>50</sub> 75°, b. 147°, n<sub>D</sub>20 1.4881, d<sub>40</sub> 0.9652, or 63% of the trans-isomer (VIII), b<sub>50</sub> 74°, b. 151°, n<sub>D</sub>20 1.4837, d<sub>40</sub> 0.9490; these were isolated as the HCl salts, liberated by KOH and extracted with ether. The following derivs. of VII and VIII were prepared: CO<sub>2</sub> addition compds., sublime at 150° and 110° (decomposition); N,N'-diphenylsulfonyl derivs., m. 145.5-6.5° and 153.5-4°; N,N'-di-Bz derivs., m. 204.5-5° and 245.5-6°; dipicrates, m. 255° (decomposition) and 254° (decomposition). With PhNCO VII gives the compound C<sub>18</sub>H<sub>20</sub>N<sub>4</sub>O<sub>2</sub>, m. 279-80°; the oxalate of VIII m. 268° (decomposition). Through the azide V gives 35% of VII and VI gives 55% of VIII. VII or VIII with

benzil gives tetraphenylpyrazine as the only product which could be isolated. VII and COC12 in ether at 0° give a cyclic urea C5H8N2O, m. 147-7.5°; VIII gives only an amorphous insol. product. VII and CS2 in EtOH give a dithiocarbamate, sintering with loss of H2S at 152° and then melting at the m. p. of 4,5-dimethylenimidazoline-2-thiol (168.5-9°), which also results by evaporating an aqueous solution of the salt on the water bath; VIII gives a salt, C5H10N2S2, sintering at 263°. VII and MeCSNH2 at room temperature react with evolution of NH3 and H2S; after heating 0.5 hr. at 80°, solution in 12 N HCl, evaporation to dryness on a steam bath, and extraction of the free base with ether, there results 2-methyl-4,5-dimethylenimidazoline, m. 89-90° (picrate, yellow, m. 150-50.5°); the product from VIII was easily hydrolyzed with regeneration of the base.

IT 642-04-6P, Pyrazine, tetraphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



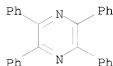
L14 ANSWER 386 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1942:12294 CAPLUS  
 DOCUMENT NUMBER: 36:12294  
 ORIGINAL REFERENCE NO.: 36:1920i,1921a-c  
 TITLE: The ammonolysis of benzil by liquid ammonia  
 AUTHOR(S): Leslie, William B.; Watt, George W.  
 SOURCE: Journal of Organic Chemistry (1942), 7, 73-8  
 CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 OTHER SOURCE(S): CASREACT 36:12294

AB The action of liquid NH3 and of solns. of NH4Cl and KNH2 in liquid NH3 on (PhCO)2 (I) at 35° and 103° is studied. When 10.5 g. I is treated with liquid NH3 at 103° for 46 h., 21.7% BzNH2 (II), 45.7% lophine (III), m. 276.5°, 0.5% tetraphenylpyrazine (IV), m. 251.5°, and 20% triphenyloxazole (V), m. 112-13°, are formed. In a 2nd experiment which is so arranged that I comes in reaction with the NH2 first at 103°, the ratio of these products is 31, 34, 0.6 and 28%, resp. In the presence of NH4Cl at 103°, the ratio is 30.5, 39.3, 0.5 and 20.5%, resp., while in the presence of NH2K the ratio is 65%, 19%, trace, and 0%, resp. When the reaction is carried out at 35° with liquid NH3 alone, 24.6% II, a trace of IV, 10% V, 29.8% imabenzil (VI), m. 196°, and 13.4% benzilimide (VII), m. 139°, are obtained in addition to a small amount of H2O-insol. crystalline material, m. 184°, by extraction with CS2. At 30°, the ratio of II:IV:V:VI:VII is 22.7:trace:7.0:40.0:4.1%. In the presence of NH4Cl at 35°, the ratio is 25.7, trace, 8.3, 27, and 16.4%, resp., and in the presence of NH2K it is 60.0, trace, 0, 11.0, and 16.0%, resp. When a mixture of 4 g. I and 7.2 g. BzH is treated at 35° with liquid NH3 for 5 h., 42% III is formed, and at 103°, 45.7%. The results are discussed and compared with those obtained by Japp, et al. (Ber. 15, 2410(1882); 16, 2636(1883); J. Chemical Society 49, 474, 825(1886)).

IT 642-04-6P, Pyrazine, tetraphenyl-  
 RL: PREP (Preparation)

(formation from reaction of benzil with liquid NH3)  
RN 642-04-6 CAPLUS  
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 387 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1940:10509 CAPLUS

DOCUMENT NUMBER: 34:10509

ORIGINAL REFERENCE NO.: 34:1659e-i,1660a-c

TITLE: Action of formamide on aryl acyloins. Formation of diarylglyoxalines and tetraarylpyrazines

AUTHOR(S): Novelli, Armando

SOURCE: Anales de la Asociacion Quimica Argentina (1921-2001) (1939), 27, 161-8

CODEN: AAQAAE; ISSN: 0365-0375

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

AB As shown by Ingersoll and collaborators (C. A. 30, 7550.3) the active agent in the formation of primary amines from ketones heated with HCO<sub>2</sub>NH<sub>4</sub> is HCONH<sub>2</sub>, formed by dehydration of the salt. N. has extended the method to the synthesis of secondary and tertiary amines (C. A. 33, 2493.6). Benzoin with excess of HCONH<sub>2</sub> does not react normally but gives chiefly 4,5-diphenylglyoxaline (I), with a little tetraphenyl-p-diazine (amarone) (II). This reaction appears to be general for aromatic acyloins. From benzoin with HCO<sub>2</sub>NH<sub>4</sub> at 230°, Leuckart (J. prakt. Chemical 41, 330(1890)) obtained II almost quantitatively, with small amts. of BzH and 2,4,5-triphenylglyoxaline (Iophine) (III) as by-products, and Davidson, Weiss and Jelling (C. A. 32, 1702.4), in the presence of excess of Ac<sub>2</sub>O, obtained 36% I and N-desylformamide, HCONHCHPhBz (IV). N. has tried the reaction with benzoin, anisoin, benzanisoin and p-toluoin, and in all cases obtained the corresponding analogs of I and II; analogs of III and IV were never found. HCO<sub>2</sub>H (11.50 g.) and 11.50 g. (NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub> were heated at 165° in a distilling flask until no more water distilled over, allowed to cool, treated with 4.20 g. powdered benzoin, heated very slowly to 180-5° and kept 2 hrs. at that temperature. At 120-50° there appeared an intense orange-red color (pointing to the intermediate formation of a dihydro derivative of II), finally changing to a light yellow. The cooled product was powdered, treated with 50 cc. boiling water, filtered, dried (yield, 4.30 g.), boiled 10 min. with 50 cc. of 10% HCl and filtered hot, and the treatment was repeated. The yellow insol. residue (0.45 g.), dissolved in a little boiling benzene and precipitated with 3-4 vols. petr. ether, yielded needles, m. 246-7°, giving an intense red color with concentrated H<sub>2</sub>SO<sub>4</sub> and identified as II by mixed m. p. with a sample prepared according to D., W. and J.; yield, 10%. The acid filtrates, decolorized with C, precipitated with NH<sub>3</sub> and crystallized from dilute alc. or pyridine, yielded 75%

I, m. 227-8° (mixed m. p.). Similarly anisoin gave 10% tetra-p-methoxyphenylpyrazine, m. 282-3°, giving an intense violet color with H<sub>2</sub>SO<sub>4</sub>, and 70% 4,5-di-p-methoxyphenylglyoxaline, m. 183-4°. Benzanisoin, prepared according to Jenkins (C. A. 26, 2451), yielded diphenyl-di-p-methoxyphenylpyrazine, m. 183-4°, giving a red-violet color with H<sub>2</sub>SO<sub>4</sub>, and p(or 5)-phenyl-5(or 4)-p-methoxyphenylglyoxaline, m. 214-15°. p-Toluoin (Gattermann, Ann.

347, 364(1906)) gave 8% tetra-p-tolylpyrazine, m. 295-6°, giving an intense red-violet color with H2SO4, and 75% 4,5-di-p-tolylglyoxaline, m. 275-6°. The following reaction mechanism is suggested. There is first formed an unstable addition product, HCONHCPh(OH)CH(OH)Ph, which loses water to form HCONHCPh:C(OH)Ph or the tautomeric form, HCONHCHPhCOPh; this is then converted into the formylamine, HCONHCPh:C(NHCOH)Ph (V), which by loss of HCO2H yields I. V reacts in part with unchanged benzoin to form the dihydropyrazine, which is dehydrogenated to II.

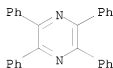
IT 642-04-6P, Pyrazine, tetraphenyl- 21885-49-4P, Pyrazine, tetrakis(p-methoxyphenyl)- 663193-96-2P, Pyrazine, tetra-p-tolyl- 854698-25-2P, Pyrazine, 2,6-bis(p-methoxyphenyl)-3,5-diphenyl-

RL: PREP (Preparation)

(preparation of)

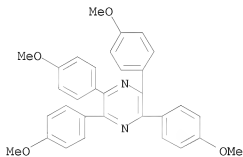
RN 642-04-6 CAPLUS

CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 21885-49-4 CAPLUS

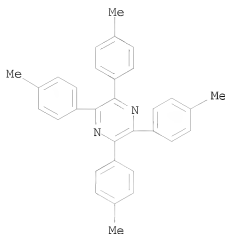
CN Pyrazine, tetrakis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



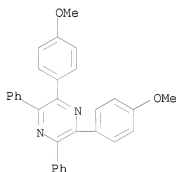
RN 663193-96-2 CAPLUS

CN Pyrazine, tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)





RN 854698-25-2 CAPLUS  
 CN Pyrazine, 2,6-bis(p-methoxyphenyl)-3,5-diphenyl- (4CI) (CA INDEX NAME)



L14 ANSWER 388 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1938:38803 CAPLUS  
 DOCUMENT NUMBER: 32:38803  
 ORIGINAL REFERENCE NO.: 32:5392h-i,5393a  
 TITLE: Reduction of amarin  
 AUTHOR(S): Takaki, Seishi; Tsuda, N.  
 SOURCE: Yakugaku Zasshi (1938), 58, 281-6  
 CODEN: YKKZAJ; ISSN: 0031-6903

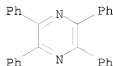
DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

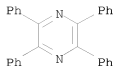
AB Reduction of amarin (10 g.) in 150 cc. alc. with 2.5% Na-Hg (300 g.) gave in the alc.-soluble fraction N-benzyl-meso-stilbenediamine, m. 90° (3 g. yield); HCl salt, m. 218°, Ac derivative, m. 220°; picrate, decomposing 190°, and in the oily fraction dibenzylamine, m. 186°, and benzylamine-HCl, m. 257-8°. The residue when extracted with hot alc. gave N,N-dibenzyl-meso-stilbenediamine, m. 164-5°, and tetraphenylpyrazine, m. 246°. Reduction of amarin with Al-Hg gave tetraphenylpyrazine, m. 246°, meso-stilbenediamine and N-benzyl-meso-stilbenediamine (the yield is very small in all cases). Zn-Hg failed to reduce amarin while Na reduction gave meso-stilbenediamine, BzH, N-benzyl-meso-stilbenediamine and tetraphenylpyrazine (yield is very small).

IT 642-04-6P, Pyrazine, tetraphenyl-  
 RL: PREP (Preparation)

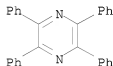
(preparation of)  
RN 642-04-6 CAPLUS  
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



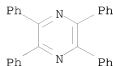
L14 ANSWER 389 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1938:30106 CAPLUS  
DOCUMENT NUMBER: 32:30106  
ORIGINAL REFERENCE NO.: 32:4149d-h  
TITLE: Ammonium amalgam. IV. Action of ammonium amalgam upon aromatic aldehydes  
AUTHOR(S): Ueda, Takeo  
SOURCE: Yakugaku Zasshi (1938), 58, 156-84  
CODEN: YKKZAJ; ISSN: 0031-6903  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
AB Aromatic aldehydes (10 g. each) were treated with NH<sub>4</sub>-Hg as before (see preceding abstract). The products obtained were: 4-Toluyaldehyde: 4,4'-dimethyl-meso-stilbenediamine, m. 114-15° (3 g. yield), 4-hydrotoluene, m. 165-6° (0.2 g.), 4-tolubenzyl alc. m. 58-60° (0.3 g.), 4-tolubenzylamine-HCl, m. 234-5°, and 4,4'-ditolubenzylamine-HCl, m. 272-3°. Anisaldehyde: 4,4'-dimethoxy-meso-stilbenediamine, m. 148-9° (3 g.), anisyl alcohol b<sub>5</sub> 95-8° (0.3 g.), hydranisoin, m. 174-5° (0.1 g.), anisylamine-HCl, m. 240-1°, dianisylamine, m. 33-4°. 2-Chlorobenzaldehyde: 2,2'-dichloro-meso-stilbenediamine, C<sub>14</sub>H<sub>14</sub>N<sub>2</sub>Cl<sub>2</sub>, m. 126-7° (2 g. crude), 2-chlorobenzyl alc., m. 70-2° (0.5 g.), 2-chlorobenzylamine-HCl, m. 215-16° (0.2 g.), and 2,2'-dichlorodibenzylamine-HCl, m. 289-90° (0.6 g.). Salicylaldehyde: 2,2'-dihydroxy-meso-stilbenediamine, m. 182-3° (2.8 g.), and 2,2'-dihydroxydibenzylamine, m. 170-1° (2 g. crude). Piperonal: 3,4,3',4' - bis(methylenedioxy) - meso - stilbenediamine, m. 150-1° (2.2 g. crude), hydroxypiperoin, isohydropiperone, piperonyl alc., piperonylamine-HCl, m. 225-6° (0.1 g.), and dipiperonylamine, m. 72-3° (0.7 g.). 4-Hydroxybenzaldehyde (5 g.): 4,4'-dihydroxyhydrobenzoin, iso-4,4'-dihydroxyhydrobenzoin and 4-hydroxybenzyl alc., m. 122-3° (yield very poor). Vanillin: vanillyl alc., m. 114-15° (yield very poor) and 9 g. vanillin. Phthalaldehyde: reaction poor. 3-Nitrobenzaldehyde: 3-azoxybenzaldehyde, m. 128-9° (4 g.), N-3-(formylphenyl)-3-nitroisobenzaldoxime, m. 190° (4 g.). 4-Nitrobenzaldehyde: 4-azoxybenzaldehyde, m. 194-5° (3.5 g.), N-4-(formylphenyl)-4-nitroisobenzaldoxime, m. 224-5° (1 g.), and N,N'-bis(4-formylphenyl)-4-azoxyisobenzaldoxime (0.1 g.).  
IT 642-04-6P, Pyrazine, tetraphenyl-  
RL: PREP (Preparation)  
(preparation of)  
RN 642-04-6 CAPLUS  
CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 390 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1938:30105 CAPLUS  
 DOCUMENT NUMBER: 32:30105  
 ORIGINAL REFERENCE NO.: 32:4149c-d  
 TITLE: Ammonium amalgam. III. Action of ammonium amalgam upon amarine  
 AUTHOR(S): Takaki, Seishi; Ueda, Takeo  
 SOURCE: Yakugaku Zasshi (1938), 58, 152-5  
 CODEN: YKKZAJ; ISSN: 0031-6903  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 AB When amarine (10 g.) in 100 cc. alc. was treated with NH<sub>4</sub>-Hg (5.5 amp./h., temperature 10-14°) the following compds. were isolated: meso-stilbenediamine, m. 120-21° (4.5 g.), N-benzyl-meso-stilbenediamine, m. 90-1° (1.5 g.), tetraphenylpyrazine, m. 246-7° (0.7 g.), and small amount of amarine. Na-Hg behaves similarly, but gave chiefly meso-stilbenediamine.  
 IT 642-04-6P, Pyrazine, tetraphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



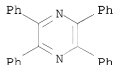
L14 ANSWER 391 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1938:30104 CAPLUS  
 DOCUMENT NUMBER: 32:30104  
 ORIGINAL REFERENCE NO.: 32:4149c-d  
 TITLE: Ammonium amalgam. II. Action of ammonium amalgam upon benzaldehyde  
 AUTHOR(S): Takaki, Seishi; Ueda, Takeo  
 SOURCE: Yakugaku Zasshi (1938), 58, 141-52  
 CODEN: YKKZAJ; ISSN: 0031-6903  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 AB When 10 g. BzH was treated with NH<sub>4</sub>-Hg(4 amp./hr. temperature, 10-20° for 2 hrs.), the following compds. were isolated: benzyl alc., hydrobenzoin, isohydrobenzoin, hydrobenzamide, benzylamine, dibenzylamine and meso-stilbenediamine. The yield of these compds. was very small.  
 IT 642-04-6P, Pyrazine, tetraphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 392 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1938:11803 CAPLUS  
 DOCUMENT NUMBER: 32:11803  
 ORIGINAL REFERENCE NO.: 32:1702h-i,1703a-b  
 TITLE: Action of ammonia on benzoine  
 AUTHOR(S): Davidson, David; Weiss, Marvin; Jelling, Murray  
 SOURCE: Journal of Organic Chemistry (1937), 2, 328-34  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 OTHER SOURCE(S): CASREACT 32:11803

AB Benzoin (I) (1.06 g.), 10 g. NH<sub>4</sub>OAc and 25 cc. glacial AcOH on refluxing give almost at once a deep orange color (formation of tetraphenyldihydropyrazine); within 10 min. amaron (II) begins to precipitate, 36% separating out after refluxing 1 hr.; addition of HNO<sub>3</sub> to the mother liquor gives an addnl. 21% of II, m. 252° (all m. ps. corrected); the mother liquors give 24% of 2-methyl-4,5-diphenylglyoxaline (III), m. 240°. That air plays a part in the formation of II is shown by an experiment in a closed tube, the yield being 0.51 g. as compared with 0.55 g. when normal refluxing was used or when air was bubbled through the solution. With 3, 5 and 10 g. NH<sub>4</sub>OAc the yields of II were 0.31, 0.43 and 0.55 g., and of III 0.24, 0.36 and 0.28 g., resp. The action of NH<sub>3</sub> upon desylamine-HCl (IV) in AcOH gives 58% II and 21% III. I and (NH<sub>4</sub>)<sub>2</sub>CO<sub>3</sub> in EtCO<sub>2</sub>H give 50% II and 13% of 2-ethyl-4,5-diphenylglyoxaline, m. 237°. I and NH<sub>3</sub> in a mixture of AcOH and HCO<sub>2</sub>H give 36% of 4,5-diphenylglyoxaline (V) and 28% of N-desylformamide (VI), m. 122°, also prepared in 75% yield by refluxing IV and AcONa in a mixture of AcOH-HCO<sub>2</sub>H. VI and NH<sub>4</sub>OAc in AcOH give 95% of V. Desyl benzoate, AcONH<sub>4</sub> and AcOH give 93% of triphenyloxazole(benzilam), m. 116°, and 3% lophine; desyl acetate gives 82% of 2-methyl-4,5-diphenyloxazole, b18 210-13°, and 13% of III.

IT 642-04-6P, Pyrazine, tetraphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 642-04-6 CAPLUS  
 CN Pyrazine, tetraphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L14 ANSWER 393 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1937:56679 CAPLUS  
 DOCUMENT NUMBER: 31:56679  
 ORIGINAL REFERENCE NO.: 31:7848i,7849a-d  
 TITLE: Hydrogen cyanide. X. The tetrapolymer  
 AUTHOR(S): Hinkel, L. E.; Richards, G. O.; Thomas, O.  
 SOURCE: Journal of the Chemical Society (1937) 1432-7

DOCUMENT TYPE:

Journal

LANGUAGE:

Unavailable

AB cf. C. A. 31, 597.2. The previous evidence for the structure of the polymerized form of HCN is reviewed and further evidence is adduced for its quadrimol. nature. The view that the polymer is diaminomaleic dinitrile is shown to be incorrect and expts. indicate it to be aminoiminosuccinonitrile (I). The polymerization product of HCN, m. 181° (decomposition), condenses with glyoxal in hot H<sub>2</sub>O to give 6-hydroxy-2,3-dicyanodihydropyrazine, red, amorphous, decomp. 240° without melting; it is very slowly decomposed by boiling H<sub>2</sub>O, but H<sub>2</sub>O

containing

a little (CO<sub>2</sub>H)<sub>2</sub> gives dicyanopyrazine (II), m. 132°. Hydrolysis of II by Na<sub>2</sub>O<sub>2</sub> in H<sub>2</sub>O and purification through the Ag salt give pyrazinedicarboxylic acid, m. 193°. The polymer of HCN in Et<sub>2</sub>O, saturated with dry HCl, gives the HCl salt of I, decomp. 135°. Refluxing the polymer with aldehydes in EtOH for 30 min. gives the following derivs. of I: benzylidene (III), yellow, m. 191° (decomposition); salicylidene, yellow with green tinge, m. 234° (decomposition); m-bromosalicylidene, yellow, m. above 250°; anisylidene, yellow, m. 227° (decomposition); isobutylidene, m. 91° (decomposition); in no case could a 2nd mol. of aldehyde be condensed. The Ac derivative of I m. 164° (decomposition); the di-Ac

derivative

m. 224° (decomposition); the Ac derivative of III m. 227° (decomposition). Ac<sub>2</sub> and I give 2,3-dicyano-5,6-dimethylpyrazine (IV), m. 171°; benzil forms 2,3-dicyano-5,6-diphenylpyrazine, m. 246°. Hydrolysis of IV gives 2,3-dimethylpyrazine-5,6-dicarboxylic acid, m. 200°. The action of HNO<sub>2</sub> on I yields 4,5-dicyano-1,2,3-triazole (V), hydrolysis of which gives 1,2,3-triazole-4,5-dicarboxylic acid. The action of HNO<sub>2</sub> on the Ac derivative of I forms 4 (or 5)-cyano-1,2,3-triazole-5 (or 4)-carboxamide, m. 219° (decomposition), and V. Oxidation of III gives 4,5-dicyano-2-phenyliminazole, cream, m. 261° (decomposition); hydrolysis gives 2-phenyliminazole-4,5-dicarboxylic acid, m. 243-4°.

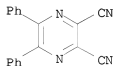
IT 52197-23-6P, 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl-

RL: PREP (Preparation)

(preparation of)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 394 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1937:44766 CAPLUS

DOCUMENT NUMBER: 31:44766

ORIGINAL REFERENCE NO.: 31:6235c-i,6236a-g

TITLE: Phthalocyanines. IX. Derivatives of thiophene, thionaphthene, pyridine and pyrazine, and a note on the nomenclature

AUTHOR(S): Linstead, R. P.; Noble, E. G.; Wright, J. M.

SOURCE: Journal of the Chemical Society (1937) 911-21

CODEN: JCSOA9; ISSN: 0368-1769

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 31:44766

GI For diagram(s), see printed CA Issue.

AB cf. C. A. 31, 1411.7. This series of studies is concerned with the possibility of obtaining similar compds. from heterocyclic instead of aromatic intermediates and efforts to bridge the gap between phthalocyanines and porphyrins. The name phthalocyanine is well established for compds. of the general type indicated by I; it is proposed to use the term porphyrazine for the central ring system of the phthalocyanine mol., i. e., for the structure represented by II; individual compds. are named by attaching a proper prefix; thus the systematic name for phthalocyanine itself is tetrabenzoporphyrazine and the corresponding compound with 4 C5H5N rings in place of 4 C6H6 becomes tetrapyrrolineporphyrazine. The formation of porphyrazines from heterocyclic compds. may be expected when (i) they contain the arrangement or are capable of yielding this arrangement easily; (ii) when they possess the necessary thermal stability and no disturbing reactive center in the heterocyclic ring; and (iii) when the heterocyclic system is capable of yielding o-5-membered rings. Thus, porphyrazines should be formed in the following series: thiophene (2,3), thionaphthene, pyridine, pyrazine and probably pyridazine; we should not expect to obtain similar products from the corresponding furan or isooxazole derivs. and the pyrrole, pyrrole and isotriazole systems are doubtful. The preparation of  $\alpha$ -methylsuccinic acid in 80-5% yields is described and the preparation from this of 3-methyl- thiophene by fusion of the Na salt with P2S3 in 18-28% yields; slow initial heating appears to be essential; the 2-Ac derivative results in 75-80% yields (contains a little of the 5-Ac isomer). Oxidation of 35 g. of the 2-Ac derivative with alkaline KMnO4 yields 12 g. 3-methylthiophene-2-carboxylic acid, 5 g. thiophene-2,3-dicarboxylic acid (III) and 0.8 g. of the 2,4-dicarboxylic acid; various exptl. conditions and corresponding yields are reported. Attempts to prepare III by direct oxidation of thionaphthene were unsuccessful, the product being recovered unchanged or being completely oxidized. Refluxing III with Ac2O for 30 min. gives the anhydride, m. 140°; the chloride with dry NH3 in C6H6 gives 53% of the diamide, m. 228°, and about 25% of the amic acid (2,3 or 3,2), m. 238°, yielding with P2O5 the imide, m. 204°. Dehydration of the amide with P2O5 gives 2,3-dicyanothiophene, m. 140°; Ac2O gives the same product but in smaller yield. Heating the dinitrile with CuCl for 10 min. at 230-50° gives a poor yield (due to loss in crystallization from C10H4Cl4) of Cu tetra-2,3-thiophenoporphyrazine, greenish blue powder with faint purple luster; metallic Cu appears to give the same compound, but no pigment was formed with AmONa, litharge or Mg. Attempts to prepare thiophene-3,4-dicarboxylic acid from 3,4-dimethylthiophene and 2,5-dimethylthiophene-3,4-dicarboxylic ester from diacetylsuccinic ester were unsuccessful. Thionaphthenequinone was converted into thionaphthene-2,3-dicarboxylic acid in 75% yields; the acid chloride and NH3 in C6H6 gives about equal quantities of the diamide, m. 204-5°, and of the imide, m. 240°; 2 g. of the amide with Ac2O gives 1.2 g. of 2,3-dicyanothiophene (IV), m. 148°; with Ac2O-AcOH there resulted 2(or 3)-cyanothiophene-3(or 2)-carboxamide, m. 192-4°; this gives a green pigment when heated with CuCl, Cu or Mg. Heating IV with CuCl at 240-50° for 30 min. gives a tetra-2,3-thiophenoporphyrazine, dull green powder, with a faint purple luster; it may contain Cl; the reactions with Al and Mg are also described. Details are given of the preparation of pyridine-2,3-dicarboxylic (quinolinic) acid and of its amide; the latter with Ac2O and AcOH yields 2 (or 3)-cyanopyridine-3(or 2)-carboxamide, m. 255-60°; with Ac2O alone, the yield was lower and there also results the Ac derivative (?) of quinolinimide, m. 150°; 2,3-dicyanopyridine, m. 130°, was prepared by passing the amide through a silica gel catalyst at 320-50° in a stream of dry NH3 gas. Tetra-2,3-pyridinoporphyrazine, blue needles with purple reflex; dimethiodide,

greenish blue; Cu derivative, blue; it is soluble in comparatively dilute H2SO4.

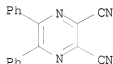
2,3-Dicyanopyrazine (V), m. 132°, was prepared from (H2NCCN)2 and (CHO)2; the 5,6-di-Me derivative, light yellow, m. 166°, was prepared from Ac2; benzil gives the 5,6-di-Ph derivative, m. 245°; phenanthraquinone yields 2,3-dicyanophenan- thra(9',10',5,6)pyrazine, golden, m. 320°. V and CuCl give Cu tetrapyrazinoporphyrazine tetrahydrate((precipitated from H2SO4 by ice), blue with purple luster; drying over H2SO4 gives the trihydrate; 2 H2O were lost at 150° and 3 at 200°; the monohydrate forms the trihydrate in the air; the Mg compound, blue on solution in concentrated H2SO4 and precipitation with H2O, yields the free

Porphyrazine, as the tetrahydrate, a blue powder. The derivs. of V yield colored solids with AlCl3, Cu, CuCl and ZnCl2, which were not examined in detail.

IT 52197-23-6P, 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl-  
RL: PREP (Preparation)  
(preparation of)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (9CI) (CA INDEX NAME)



L14 ANSWER 395 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1934:39373 CAPLUS

DOCUMENT NUMBER: 28:39373

ORIGINAL REFERENCE NO.: 28:4733g-i,4734a-d

TITLE: Oxidation of naphthoquinoxalines

AUTHOR(S): Crippa, Giunio Bruto; Perroncito, Giulio  
SOURCE: Gazzetta Chimica Italiana (1934), 64, 91-99  
CODEN: GCITA9; ISSN: 0016-5603

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

AB cf. C. and Long, C. A. 26, 144; 27, 3938. The oxidation of 1,2-naphthoquinoxalines by CrO3 and by H2O2 was extended to other compds.  $\alpha,\beta$ -Diphenyl-1,2-naphthoquinoxaline (I) was chosen, since the possibilities of oxidation are more limited because of the double substitution. I, CrO3, Ac2O and AcOH refluxed 1 hr. yield  $\alpha,\beta$ -diphenyl - 1,2 - naphthoquinoxaline - 3,4 - quinone (II), orange-yellow, m. 267°, which, refluxed with o-C6H4(NH2)2 in glacial AcOH, yields  $\alpha,\beta$ -diphenyl-1,2-naphthoquinoxaline-3,4-phenazine (III), pale yellow, m. above 300°. The mother and wash liquors from II boiled with excess Na2CO3, let stand, the filtrate acidified and evaporated ppts. 2,3-diphenyl-5-carboxypyrazine-6-o-benzoic acid (IV), m. 148° (decomposition). It is also formed by oxidation of II with KMnO4. Distilled over CaO, there sublimes a lemon-yellow unidentified compound, m. 143°, insol. in alkalies, which is probably the unknown 2,3,5-triphenylpyrazine. The formation of II and IV shows the general analogy between the oxidation of 1,2-naphthoquinoxalines and 1,2-naphthotriazoles. I in glacial AcOH refluxed 3 hrs. with periodical addns. of H2O, yields  $\alpha,\beta$  - diphenyl - 1,2 - naphthoquinoxaline N - oxide, ClOHe.N:CPh.CH:N:O, m. 252°, which is reduced by SnCl2 in concentrated HCl to I. Under the same conditions as with I, IV is oxidized by H2O2 to 2,3-diphenyl-5-carboxypyrazine-N-oxide-6-o-benzoic acid (V),

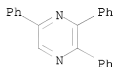
the exact structure of which is doubtful, yellow, m. 224°, reduced by SnCl<sub>2</sub> to IV. Likewise β-phenyl-1,2-naphthoquinoxaline and H<sub>2</sub>O<sub>2</sub> form β-phenyl-1,2-naphthoquinoxaline 3,4-N-oxide, C<sub>10</sub>H<sub>6</sub>.N:CPh.CH:N:O, light yellow, m. 236°, is oxidized by CrO<sub>3</sub> to an unidentified orange-yellow compound (VI), m. above 300°, which behaves like o-quinones, and probably has the structure shown. The expts. show that oxidation of naphthoquinoxaline derivs. by H<sub>2</sub>O<sub>2</sub> involves the union of an O atom to the nuclear N, and though compds. with a nitrogenated heterocyclic nucleus containing such a bond are known, there have been on the other hand no cases of the direct introduction of O to form such compds.

IT 36476-77-4P, Pyrazine, 2,3,5-triphenyl- 856064-62-5P,  
2-Pyrazinecarboxylic acid, 3-(o-carboxyphenyl)-5,6-diphenyl-  
RL: PREP (Preparation)

(preparation of)

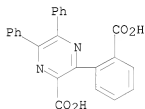
RN 36476-77-4 CAPLUS

CN Pyrazine, 2,3,5-triphenyl- (CA INDEX NAME)



RN 856064-62-5 CAPLUS

CN 2-Pyrazinecarboxylic acid, 3-(o-carboxyphenyl)-5,6-diphenyl- (3CI) (CA INDEX NAME)



L14 ANSWER 396 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1934:36801 CAPLUS

DOCUMENT NUMBER: 28:36801

ORIGINAL REFERENCE NO.: 28:4407h-i,4408a-e

TITLE: Optically active mixed benzoinz from  
(+)-mandelonitrile

AUTHOR(S): McKenzie, Alex.; Kelman, Andrew L.

SOURCE: Journal of the Chemical Society (1934) 412-18

CODEN: JCSOA9; ISSN: 0368-1769

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB (+)-Mandelonitrile (I) (8 g.), added to p-MeC<sub>6</sub>H<sub>4</sub>MgBr, gives 3.5 g. of

(-)-p-toluoylphenylcarbinol (II), m. 102-3°, [α]<sub>D</sub><sup>17</sup>

-86.5°, [α]<sub>D</sub><sup>15</sup> 546125 -120° (Me<sub>2</sub>CO, c 1); with 5 drops of

N EtOH-KOH, [α]<sub>D</sub><sup>15</sup> 546125 decreases from -1.7° to -0.30°

in 23 hrs.; 3 addnl. drops cause optical inactivity in 30 min.; the

residue is a mixture of dl-II and dl-Bz(p-MeC<sub>6</sub>H<sub>4</sub>)CHOH. PhMgBr and (-)-II

give the β-form of (+)-p-tolylhydrobenzoin (III), m. 135.5-6°,

[α]<sub>D</sub><sup>15</sup> 546125 252° (Me<sub>2</sub>CO, c 1.002), 305.7° (C<sub>6</sub>H<sub>6</sub>, c

2.0115), 259.3° (CHCl<sub>3</sub>, c 1.8935), 266.4° (EtOH, c 1.725);

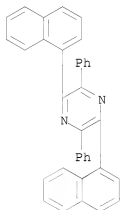
the sp. rotation in Me<sub>2</sub>CO decreases with increasing temperature dl-II and

PhMgBr



(6 mols.) give the  $\beta$ -form of dl-III, m. 181-2°. I and m-MeC6H4MgBr give the (-)-m-isomer (IV) of II, m. 73-3.5°,  $[\alpha]_D^{25} -122.3^\circ$  (Me2CO, c 1.0015),  $-151^\circ$  (EtOH, c 1); addition of 3 drops N EtOHKOH causes a change in  $[\alpha]_D^{25}$  from -3.02° to -0.50° in 7 hrs.; 4 addnl. drops cause complete racemization after 56 min. The dl-m-isomer m. 69.5-70°. IV and PhMgBr give the  $\beta$ -form of the (+)-m-isomer of III, m. 125-6°,  $[\alpha]_D^{25} 209.5^\circ$ ,  $[\alpha]_D^{25} 244.3^\circ$  (Me2CO, c 1.9975); 222.9°, 254.4° (EtOH, c 2.003); 213.4°, 246.3° (CHCl3, c 2.0055); 246.1°, 284.4° (C6H6, c 1.1235). The  $\beta$ -form of the dl-m-isomer of III m. 123-4°. o-MeC6H4MgBr and I give Ph o-tolyl diketone (2-methylbenzil), m. 57-8°. I and EtMgBr give (-)-propionylphenylcarbinol, m. 39-40°. MeMgI and I give a partially racemized AcPhCHOH,  $[\alpha]_D^{25} -74.7^\circ$  (EtOH, c 2.0615) dl-Cyclohexylphenylcarbinol, m. 62-3°, from dl-I and cyclohexyl-magnesium bromide (V); with PhMgBr it yields the  $\beta$ -form of dl-cyclohexylhydrobenzoin, m. 133-4°. V and I did not give an optically pure active ketol, the highest value being  $[\alpha]_D^{25} -134^\circ$  (Me2CO, c 1.019). The ketols could not be isolated in the reaction with  $\alpha$ -ClOH7MgBr (VI); the product from I, m. 240-50° (decomposition), contained N and Cl and was optically inactive; NH3 gave a compound, m. 260-60.5°, which appears to be 2,5-diphenyl-3,6-di- $\alpha$ -naphthylpyrazine, VI and dl-I give BzCOC10H7 in either Et2O or C6H4Me2. p-MeOC6H4MgBr and I give (-)-anisoylphenylcarbinol [(-)-benzanisoin], m. 102.5-3.5°,  $[\alpha]_D^{25} -76.5^\circ$  (Me2CO, c 1.0005),  $-90^\circ$  (EtOH, c 1.0055). With 5 drops N EtOH-KOH it is completely racemized in 411 min.; the reaction is unimol. PhMgBr gives the  $\beta$ -form of (+)-anisylhydrobenzoin, m. 146-7°,  $[\alpha]_D^{25} 259.7^\circ$  (Me2CO, c 1.0975); the effect of temperature is pronounced.

IT 858837-08-8P, Pyrazine, 2,5-di-1-naphthyl-3,6-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 858837-08-8 CAPLUS  
 CN Pyrazine, 2,5-di-1-naphthyl-3,6-diphenyl- (3CI) (CA INDEX NAME)



L14 ANSWER 397 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1931:13779 CAPLUS  
 DOCUMENT NUMBER: 25:13779  
 ORIGINAL REFERENCE NO.: 25:1492g-i,1493a-d  
 TITLE: Dioximes. LXXII  
 AUTHOR(S): Durio, E.; Bissi, M.  
 SOURCE: Gazzetta Chimica Italiana (1930), 60, 899-903

DOCUMENT TYPE:

Journal

LANGUAGE:

Unavailable

GI For diagram(s), see printed CA Issue.

AB In the oxidation of  $\alpha$ -benzil dioxime (I) with alkaline  $K_4Fe(CN)_6$ , Auwers and Meyer (cf. Ber. 21, 806 (1888)) obtained the diphenyl peroxide  $Ph(C_2N_2O_2)Ph$  (II) and a secondary product  $C_{28}H_{20}O_2N_2$  (III). III has never been described since, yet its formation may be of importance in explaining the dehydrogenation of glyoximes to the so-called peroxides. The present paper shows that III is formed from the  $\alpha$ - but not from the  $\beta$ -form of I, and describes the conditions which lead to a much higher yield than the extremely small yield by the procedure of Auwers and Meyers. Aqueous 15%  $K_4Fe(CN)_6$  (30 g.) added dropwise to I (10 g.) in 10% KOH (200 cc.), keeping ice-cold, the precipitate purified by boiling in EtOH and recrystg. the residue from glacial AcOH, yields 25-30% of the compound  $C_{28}H_{20}O_2N_2 \cdot 2AcOH$ ; in air it loses slowly at room temperature and rapidly at  $100^\circ$  its AcOH of crystallization, leaving III, which was proved to be dioxotetraphenylpyrazine  $O:N:CPh:N(:O):CPh:CPh$ . It is yellow, m.  $322^\circ$ , gives an intense red solution in concentrated  $H_2SO_4$  (from which it is reprecipitated by water), is not altered by heating with HCl (d. 1.19) at  $160-170^\circ$  in a sealed tube. Traces of III are also formed by the oxidation of I with  $NaClO$  (cf. Note LXI, C. A. 24, 3488). III (5 g.) in glacial AcOH and Zn dust (3 g.), heated several min. on a boiling water bath, filtered and the filtrate cooled, ppts. 3.5 g. of tetraphenylpyrazine (IV). After separation of IV, the mother liquor, made alkaline

with NaOH and steam-distilled, yields a small quantity of tetraphenylpiperazine. III and  $PCl_5$  (equal parts), heated at  $140-150^\circ$ , yield a brown liquid which treated with water solidifies, and crystallized from glacial AcOH, yields chlorotetraphenylpyrazine (V), m.  $212^\circ$ , gives an intense red solution in concentrated  $H_2SO_4$ . This reaction is similar to that of furoxans under the same conditions (cf. Notes L and LVI, C. A. 23, 375; 24, 845), i. e., III is first deoxygenated to IV, which then reacts with Cl with formation of V. The formation simultaneously of II and III from I proves that  $K_4Fe(CN)_6$  acts on I in 2 distinct ways: (1) simple dehydrogenation which forms II, and (2) a more complex reaction which involves the elimination as  $HNO_2$  of 2 H atoms and 2 NOH groups from 2 mols. of I, thus:  $2I + 2O \rightarrow III + 2HNO_2 + H_2O$ . Since under the same conditions  $\beta$ - and  $\alpha$ -benzil dioxime (VI and VII) form exclusively II, both NOH groups of VI and VII are dehydrogenated by oxidizing agents, whereas in I, 1 NOH group is dehydrogenated and the other is oxidized, i. e., toward oxidizing agents the NOH groups of VI and VII behave the same and those of I differently. This behavior is analogous to that with  $Ni^{++}$  ions, where of the 3 benzil dioximes only I forms the complex  $Ni-(Cl_4H_{10}N_2O_2)_2$  by substitution of 1 oximic H atom. The reduction of III by nascent H or  $PCl_5$  to IV shows the presence of 2 extra-nuclear O atoms, confirms the formula given and excludes the formula:  $O.O.N.CPh:N.CPh:CPh$ . The reactions described in the present paper as well as those already known of glyoximes show that it is impossible to generalize, e. g.,  $\alpha$ -p-tolil dioxime and anisil dioxime, which have many properties in common with I, yield on oxidation with  $K_4Fe(CN)_6$  no trace of III.

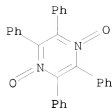
IT 876488-98-1P, Pyrazine, 2,3,5,6-tetraphenyl-, 1,4-dioxide  
879660-13-6P, Pyrazine, 2,3,5,6-tetraphenyl-, compound with acetic acid

RL: PREP (Preparation)

(preparation of)

RN 876488-98-1 CAPLUS

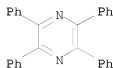
CN Pyrazine, 2,3,5,6-tetraphenyl-, 1,4-dioxide (CA INDEX NAME)



RN 879660-13-6 CAPLUS  
CN Pyrazine, tetraphenyl-, monoacetate (9CI) (CA INDEX NAME)

CM 1

CRN 642-04-6  
CMF C28 H20 N2



CM 2

CRN 64-19-7  
CMF C2 H4 O2



L14 ANSWER 398 OF 399 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1927:32581 CAPLUS

DOCUMENT NUMBER: 21:32581

ORIGINAL REFERENCE NO.: 21:3901i,3902a-b

TITLE: Problem of ring closure in addition compounds. III.  
Determination of the configuration of stereoisomeric  
hydrazones

AUTHOR(S): Hieber, Walter; Sonneckalb, Fritz

SOURCE: Ann. (1927), 456, 86-110

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. C. A. 20, 3251. Two mol.  $\alpha$ -benzilozazone (I) in  $\text{CHCl}_3$ , treated dropwise with 1 mol.  $\text{SnCl}_4$  in  $\text{CHCl}_3$  gives the dark yellow, non-hygroscopic compound  $\text{SnCl}_4.2\text{I}$ , decomps. about  $145^\circ$ . Equimol. amts. of I and  $\text{SnCl}_4$  give the compound  $\text{SnCl}_4.\text{I}$ , brick-red powder, m. about  $120^\circ$ ; on dilution the concentrated red solution becomes yellow (dissociation).

Equimol. amts. of the  $\beta$ -osazone (II) and  $\text{SnCl}_4$  in  $\text{CHCl}_3$  give the bright red, slightly hygroscopic compound  $\text{SnCl}_4.\text{II}$ , m. about  $60^\circ$ ; this is more soluble in indifferent organic compds. than the  $\alpha$ -isomer. On the basis of these observations I is considered to be the syn-, II the anti-form.  $\text{SnCl}_4.2$  benzalphenylhydrazone, yellow-brown, m.  $70-5^\circ$  (decomposition).  $\text{SnCl}_4.2$

benzophenone phenylhydrazone, red, m. 190°. SnCl<sub>4</sub>.2 benzalanil, canary-yellow, m. 200°. SnCl<sub>4</sub>.benzophenone anil, light yellow, m. 180°. SnCl<sub>4</sub>.benzil dianil, golden yellow, m. 225°; further addition of SnCl<sub>4</sub> gives the 2SnCl<sub>4</sub>.dianil, yellow; a red compound, probably 3SnCl<sub>4</sub>.2 dianil, is also formed but was not analyzed. SnCl<sub>4</sub>.benzil monoanil, light orange, m. 175°; a red addition product, 3SnCl<sub>4</sub>.2 benzil monoanil, m. 90°, was also obtained. SnCl<sub>4</sub>.benzil monophenylhydrazone, brownish red, m. 165°. SnCl<sub>4</sub>.tetraphenylpyrazine, yellow, decomp. 135°; with 2 mol. SnCl<sub>4</sub>, the compound 2SnCl<sub>4</sub>.tetraphenylhydrazine, deep red, results. SnCl<sub>4</sub>.2 dephenyldihydropyrazine, pale yellow, in. 75°. SnCl<sub>4</sub>.diphenyldihydropyrazine, light orange, m. 115-20° (decompn). Mol. weight detns. on certain of these compds. are reported.

IT 856064-22-7P, Pyrazine, tetraphenyl-, compound with SnCl<sub>4</sub>  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 856064-22-7 CAPLUS  
 CN Pyrazine, tetraphenyl-, compd. with SnCl<sub>4</sub> (3CI) (CA INDEX NAME)

CM 1

CRN 7646-78-8

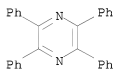
CMF C14 Sn



CM 2

CRN 642-04-6

CMF C28 H20 N2



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 ACCESSION NUMBER: 1911:15352 CAPLUS  
 DOCUMENT NUMBER: 5:15352  
 ORIGINAL REFERENCE NO.: 5:2649f-i,2650a-d  
 TITLE: Action of Hydrazine Hydrate on o-Diketones  
 AUTHOR(S): Curtius, Theodor; Kastner, Richard  
 CORPORATE SOURCE: Chem. Inst., Univ. Heidelberg  
 SOURCE: Journal fuer Praktische Chemie (Leipzig) (1911), 83, 215-32  
 CODEN: JPCEAO; ISSN: 0021-8383  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable  
 GI For diagram(s), see printed CA Issue.  
 AB Curtius and Thun (J. prakt. Chemical, 44, 161) have shown that N2H4.H2O reacts with o-diketones, such as benzil, to form derivs. of the

hypothetical hydrazimethylene (I). The present work has been undertaken mainly to show that p-tolil behaves in a similar manner. Hydrazip-tolil (p-toluoyl-p-tolylhydrazimethylene) (II), m. 139-40°, is obtained by heating an alc. solution of p-tolil with N2H4.H2O (1 mol.). It yields deoxy-p-toluoil when heated under reduced pressure, and in C6H6 solution is oxidized by yellow HgO to azo-p-tolil (p-toluoyl-p-tolylazomethylene) (III), m. 84°, red crystals which behave like azobenzil (Curtius and Lang, J. prakt. Chemical, 44, 554), being converted by Br in CCl4 into dibromodeoxy-p-toluoil, C6H4Me.COBr2.C6H4Me, m. 120°. When equal mol. quantities of deoxy-p-toluoil and N2H4.H2O are heated on the H2O bath, bis-p-toluoyl-p-tolylazimethylene, [C6H4Me.CH2.C(C6H4Me)]2N2, m. 155-6°, is produced. Bishydrazip-tolil (di-p-tolylbishydrazimethylene) (IV), m. 137°, is obtained by heating p-tolil with a little alc. and an excess of N2H4.H2O at 100° for 24 hrs.; it yields 4,4'-dimethyltolane when its solution in C6H6 is treated with yellow HgO. When a solution of hydrazibenzil in H2SO4 is poured into H2O, at 0°, the products obtained are benzil, BzH, benzaldazine, and bisbenzilketazine. The last substance, which is also produced by heating hydrazibenzil and benzil together at 200°, is identical with Curtius and Blumer's bisbenzoylphenylazimethylene obtained from benzoinhydrazine (J. prakt. Chemical, 52, 132). Bis-p-tolilketazine, N2[.tplbond.'C(C6H4Me).CO.C6H4Me]2, m. 248°, is similarly obtained from hydrazip-tolil and H2SO4, from hydrazip-tolil and p-tolil at 180°, and by heating p-toluoilhydrazine at 185° for 5 hrs. (A by-product in the last reaction is tetra-p-tolylpyrazine, m. 287°. The corresponding by-product C28H20N2 obtained by Curtius and Blumer (Loc. cit.) by heating benzoinhydrazine is proved to be tetraphenylpyrazine, as suggested by Snape and Brooke (J. Chemical Society, 71, 532). p-Toluoilhydrazine, C6H4Me.CH(OH).C(C6H4Me):N.NH2, m. 147-8°, is obtained together with tetra-p-tolylpyrazine by heating toluoil and N2H4.H2O for 5 hrs. on the H2O bath and keeping the mixture for 3 wks; before treating it with Et2O for removing the second product. Bisbenzilketazine is not hydrolyzed by boiling alc. and dilute H2SO4 or by dilute H2SO4 at 160°, but is decompose by the prolonged action of H2SO4, or rapidly by boiling aqueous alc. NaOH, yielding N2H4 and benzil.

IT 663193-96-2P, Pyrazine, tetra-p-tolyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 663193-96-2 CAPLUS  
 CN Pyrazine, tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)

